

AMERICAN VETERINARY REVIEW.

AUGUST, 1899.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

LAST CALL FOR THE "JUBILEE."

Before another number of this journal will reach its subscribers, the members of the various organizations slated to convene in New York City during the second week in September, will have assembled for participation in the most glorious reunion of veterinarians ever held in America. And right welcome will they be to the hospitable gates of Gotham, where there awaits them a cordial greeting, with every opportunity to partake of the intellectual and social pleasures which have been prepared for them by the various committees having charge of the arrangements.

The REVIEW but voices the united sentiment of the veterinarians of the metropolis when it says to the profession of all America, "Come, one and all, and make this sextuple event a red letter week in the history of the profession in this country."

The programme, as far as obtainable, will be found in the news department.

CONTEMPTIBLE METHODS OF PRACTICING VETERINARY MEDICINE.

It may be possible that every young science has to undergo the same annoyances which inflict that of veterinary medicine, and that our greater interest and concern for it magnifies those which are ever and anon cropping up like barnacles upon the hull of a seagoing vessel—but it does seem to us that we are

subjected to more than our share. If some special legislation is not being attempted to lower the bars for quackery, politics brings to the highest offices men who have no qualification of education, and who usually bring discredit and chagrin upon our calling. Just when everything begins to run smoothly, and we feel that all forces are conspiring for the elevation and dignification of our struggling profession, some disturbing influence arises to annoy and degrade it. While such extrinsic elements as panics, trolleys, automobiles and bicycles can be successfully combatted by the inherent character and glory of the horse, what shall we do about the intrinsic forces which put forth live stock insurance companies, "quacky" advertising, and veterinary service associations—all purporting to be promulgated by members of the profession with the qualification of diplomas? It is, of course, the pursuit of money, irrespective of the good name of the profession which unfortunately has to acknowledge them as members, that brings them into existence.

While these remarks are applicable to such conditions generally, they are called forth at this time by the appearance in New York City of a company calling itself "The Veterinary Service Association," and which seeks to make contracts with individuals and firms to furnish medical attendance to their horses, cattle and dogs for the sum of two cents per day each, guaranteeing them the services of qualified and licensed veterinary surgeons.

The following circular has been issued and distributed among animal owners in Greater New York :

The Veterinary Service Association [Incorporated.]—The purpose for which this Corporation is formed is to furnish medical attendance to horses and cattle by competent and licensed veterinary surgeons. After many months of labor, we have succeeded in gathering about us a large and efficient staff, which will be located in various districts throughout the city.

It is difficult for us to enumerate the many advantages to be derived by contracting with us, but prompt medical attendance, in time of emergency, combined with economy are in themselves sufficient to warrant you to contract with us.

This Corporation is the first and only one of its kind, and we are certain that an investigation will convince you that it is reliable in

every respect. We would impress upon our clients that there are no assessments levied, as in the defunct horse insurance companies, but for the payment of a few cents a week, we agree to furnish a veterinary surgeon whenever your horses or cattle are sick.

Our corps of surgeons are experienced medical men of the highest standing. One of them at least, has his office in your neighborhood, or in the vicinity of your stable, and is under contract with us to attend all horses and cattle in time of sickness, between the hours of 6 A. M. and 10 P. M.

If you become our client, our surgeon becomes your veterinary adviser, and it is your privilege to call upon him for advice, whether your animals are sick or not. Our medical department is under the personal supervision of Dr. Mark L. Frey, who has had a thorough collegiate training. It will be our endeavor to conduct this corporation in accordance with the most advanced scientific methods.

Our responsibility will bear the fullest investigation, and we request you to forward us your application after you have convinced yourself that we will carry out our contract with you in every detail.

Your animal, whether it be horse, cow, sheep or dog is valuable to you. You use it either for business or pleasure. You must be humane and look after its health. Animals are subject to nearly all ailments known to man, and are very sensitive to pain. Therefore it is essential that a competent veterinarian should attend it.

It is as ridiculous for horse or cattle owners to allow inexperienced stablemen to attempt to doctor their animals, as it is for a person to attempt to diagnose his own illness and ignore medical aid.

We will here illustrate one of the many advantages: Let us suppose a client stables his animal in the lower part of the city. He or his driver happens to have the horses five miles from the stable and the animal is taken suddenly sick. We furnish a card containing a complete list of the names and addresses, with telephone calls, of our veterinary surgeons. All you have to do is to send a hurry call for the nearest surgeon, and your horse will receive prompt medical attendance, without any extra fee. Were you not under contract with this Corporation you would be compelled to pay a veterinary surgeon at least \$2 for the call.

It costs you but a fraction over two cents a day for our service, whether you call upon us ten or one thousand times a year. If you used the minimum number you would be saving money. If we give you the service you contract for, it will be the best possible recommendation we can furnish, and will materially assist in increasing our clientship.

Fees.—Fifty cents for each animal upon signing application. Fifteen cents per week for each animal payable in advance. Agents are authorized to collect the application fee, but all other payments must be made to our authorized collectors, or at the office of the Corporation. Surgical operations are subject to agreement as to charges between the client and our veterinary surgeon. This Corporation receives nothing but the application fee and the weekly charges.

The following is the form of letter sent forth to various vet-

erinarians, the one herewith being an actual copy of one received by the editor of the REVIEW :

NEW YORK, July 18, 1899.

Roscoe R. Bell, D. V. S., 100 Seventh Avenue, Brooklyn, N. Y.

DEAR DOCTOR :—Will you please call on us Thursday, the 20th inst., in reference to contracting for veterinary service. We have several applications in your location, and will await your calling before completing arrangements. Should the time appointed be inconvenient, please telephone us making your own time, not later, however, than Friday of this week.

Yours truly, etc.,

THE VETERINARY SERVICE ASSN.

M. L. FREY, President.

The following reply was addressed to the Service Company :

*SEVENTH AVE. AND UNION STREET,
BOROUGH OF BROOKLYN, NEW YORK CITY, }
July 21, 1899.

The Veterinary Service Association, 32 Broadway, New York City.

DEAR SIR :—I am in receipt of your letter requesting me to call at your office in reference to contracting for veterinary service with you. I beg to say in reply that I do not approve of your association, and do not believe that any veterinary surgeon with any amount of practice will need your aid in conducting his business. I shall, therefore, not only not call upon you myself, but will endeavor to prevent by argument any other veterinarian of qualification from doing so.

Very respectfully,

ROSCOE R. BELL.

Before the reception of this letter we had already read a similar one addressed to Dr. Robert W. Ellis, appointing June 29 as the date when he should call. The Doctor having business in the locality of the office of the company, 32 Broadway, called to see what it meant and found that the offices were located on the eighth floor of a large office building. It consisted of two rooms, one for the reception of visitors, the other private. The scheme of the company was unfolded to the Doctor about as follows: The company desired to enter into a five-year contract with a number of veterinarians located in various parts of the city to treat the horses of their (the company's) clients for the stated price of two dollars per horse per year. As they were to charge such clients fifteen cents per week, or \$7.80 per year, it left the company the very handsome margin of \$5.80 per horse, while the veterinarian has in all probability lost the client from his individual account. The

outer office was adorned by a rack containing the professional cards of some forty or fifty veterinarians, many of them prominent and some of them active in veterinary associations. When asked if those gentlemen were acting for the company, the answer was given in the affirmative. When reminded that associational ethics would debar them from such service, he was told that upon that point it had been ruled by a veterinarian of authority that the present instance was not parallel to the live stock insurance companies, and that no objection could be made to such a contract. Doubt being expressed of the correctness of the President's construction of the spirit of ethical law, he observed that the Doctor was in an excellent position to decide the question himself, and hoped that he would do so. He was urged to give the subject earnest thought, which he did, the result of which was the following letter:

NEW YORK, July 3, 1899.

DEAR DOCTOR :—I have not as yet had the time nor opportunity to comply with your request of 29th ult., in looking up the question as to whether it is a violation of the Code of Ethics of the several veterinary medical associations for veterinarians to contract with you or not; but personally I am satisfied that it is entirely *unprofessional*, and upon that ground alone I would personally refrain from any connection with it.

Yours very respectfully,

ROBT. W. ELLIS.

Dr. Ellis says in a communication to the REVIEW:

"Now, if those cards are placed in that conspicuous rack at their owner's will, and if they are connected with the company, as claimed, it is a pity; if they are there as bait only, it is a shame. If professional etiquette be left entirely out of the matter, how can a man be such an ass as to give his clients into the hands of such a concern, allowing them to collect the money for his work and paying him his wages, as the mill owner does his laborers. The circular is sent to a veterinarian's clients, and a man calls and explains that his company will treat all their stock for two cents a day, and upon inquiry they find that the very veterinarian whom they have always employed will do the work, just as he has always done, with the difference that they will not have to pay two dollars every time he enters that stable. Even that client doesn't know that the doctor is reduced to the pittance of two dollars per year. How beautifully he is playing into the hand of the service association by signing that contract, and how easily the association is foiled by his refusal to do so. No, the man who signs that contract has no practice, and thinks he can get one in that way, or if he has one he is in hopes of getting a hold upon some other man's by getting into it."

We know nothing of the personality of the promoters of the

scheme, and we care less. We do know that if it were to be successful it would be very injurious to veterinary practitioners. They would be deprived of three-fourths of their present revenue by the figures already given, and we do not believe any qualified veterinarian with a practice is willing to do that. We bring this subject prominently before the veterinarians of the Metropolitan district that none may thoughtlessly be led into any such undertaking, and with the hope that they will discountenance it in all others.

In the meantime we shall notify a number of those whose cards are displayed in the office of the company, and trust they will compel the responsible head of the company to remove them without delay.

THE FUTURE OF THE HORSE.

Editors American Veterinary Review :

DEAR SIRS :—From your special opportunities to observe the tendencies of the times, I would be glad if you would give me your opinion of the future of veterinary medicine. In other words, will it prove an enduring profession in the sense of being a source of revenue to those practicing it. Here in the West, we hear a great deal about the passing of the horse (the most profitable veterinary patient), the automobile, the bicycle and every other device to replace our old friend ; but our knowledge of it all comes through the press, as we have never seen the automobile in this part of the country. The special reason that induces me to ask this favor of you is that I have a son who is now about the right age to enter college, and he is very anxious to begin his studies this fall. I should regret to have him spend three years at college and then find out that, like Othello, his occupation was gone.

By giving me your honest opinion, you will greatly oblige,

Yours very truly,

A. B————, V. S.

We can scarcely find any fault with the anxiety of our Western correspondent, in view of the ridiculous articles with which the daily press is constantly teeming, more particularly the New York *Herald*, whose alien editor is probably a large shareholder in some of the numerous companies capitalized on paper for untold millions for the purpose of either manufacturing the

machines or selling the stock. It is passing strange that a newspaper which has in the past received so much from the horse interest of the country should not be able to find a kind word for the soliped in the last year of the nineteenth century.

But there is no more danger of the displacement of the horse than there is of the extermination of man. The world is steadily becoming more populous, and the demands of trade and travel more diversified and exacting, so that new methods are constantly being introduced to meet the requirements of ever-changing conditions. Just a few years ago such a thing as the gigantic delivery system of the great department stores was not deemed within the possibilities of human undertakings. That the fair bargain-hunter would invade one of the large Sixth Avenue stores, spend two or three hours overhauling the various departments and finally wind up her mad career by purchasing two cakes of toilet soap for six cents, and order it sent C. O. D. to some rural address ten miles distant—was formerly recited only in a spirit of jest. To record it now is but to give the history of many instances occurring daily. So that the delivery problem with such establishments has become a serious one. We are told that it costs one New York department house \$150,000 per annum to deliver their sales to their customers. It is not strange, therefore, that they are trying to curtail this branch of expenditure. But, then, this was a new use for the horse, and there are many other places which he has filled by the increasing demands of commerce. It may be that in some of these avocations he will be supplanted by mechanical appliances when they become perfected and cheaper. The horse, however, has never been threatened with extermination in his true sphere, any more than American mothers are in danger of being substituted by the incubator. As a pleasure vehicle it may be possible to pass over good roads with speed and comfort in the automobile, but when the novelty wears away it will lack the life, interest and pleasure of man's best friend.

We advise our Western correspondent, therefore, to pay no heed to the wild vaporings of the stock-kickers and sensation-

mongers, but to send his boy to the best veterinary school he may know, to thoroughly equip him for the practice of a profession whose lines are continually being enlarged and where, though spreading to all domestic animals, the horse will ever remain the typical veterinary patient.

SILVER ANNIVERSARY OF THE AMERICAN VETERINARY COLLEGE.

During the week of the "Veterinary Jubilee" in New York next month the Alumni Association of the above-named college will celebrate the twenty-fifth anniversary of the establishment of their alma mater. The record of that institution is such that her sons may well feel exultant on her attainment of the quarter-century mile-stone, and, while they will feel the keenest pride in the glory of her mature years and her splendid achievements, the profession at large may rightfully join in the celebration, for her motto has ever been "*non nobis solum*," and her grand work has thrown its influence upon veterinary education everywhere.

In this connection we reprint an editorial from the June number of the *Journal of Comparative Medicine and Veterinary Archives*:

"A. V. C. SILVER ANNIVERSARY.—The twenty-fifth anniversary of the establishment of a veterinary college in the United States is an event of no little importance in a profession the youngest of them all, and one that has moved with no uncertain steps to a recognized place among the higher vocations of man.

"The record of the American Veterinary College as a factor in higher veterinary education is a grand one, and fittingly adorns an institution that has sent forth so many worthy representatives of the profession. The chief director for many years has earned an international fame, and the school over which he has so worthily presided been accorded a recognition abroad seldom given an American medical school. Her graduates, now exceeding six hundred and more, scattered all over our own land and dotting many parts of foreign soil, have contributed much to the elevation of the profession wherever they have set foot.

"Such an occasion should recall every dutiful son of this institution to the home of his alma mater and to join in the festivities of so mo-

mentous an occasion in veterinary education in America. There will be old friendships to renew ; there will be a mingling of pleasure and gladness for all ; a reminiscent period for each one, and a comparison of college days then and now. There will be many an experience to relate, many a disappointment to tell of, many a victory to record, and there will be one more opportunity of being for a day with that grand old man whom every A. V. C. boy loves, whom every member of the American veterinary profession honors, the Dean of the American Veterinary College, Prof. A. Liautard."

ORIGINAL ARTICLES.

INVOLUNTARY SHAKING OF THE HEAD AND ITS TREATMENT BY TRIFACIAL NEURECTOMY.

BY W. L. WILLIAMS, D. V. S.,

Professor of Surgery, New York State Veterinary College.

About two years ago the writer communicated the case of a horse suffering from involuntary jerking of the head which was effectively relieved by trifacial neurectomy.

While this one case was interesting and suggestive it stood alone, so far as we know, in veterinary annals and did not furnish sufficient data to constitute a secure foundation for diagnosis, therapeutics or prognosis.

Subsequent to that date we have been fortunate enough to secure for operation three additional cases, two of which were operated upon by us, the third by student P. under our directions.

These with a goodly number of cases not operated upon furnish sufficient data to warrant us in tentatively arranging the symptoms of the affection, simplifying its diagnosis, proposing a workable technique for operating and rendering a thoroughly favorable prognosis possible.

The malady is probably a neurosis of the infraorbital portion of the super-maxillary division of the trifacial nerve and possibly chiefly or even wholly confined to those branches of the nerve which pass dorsalwards or toward the nose immediately upon emerging from the foramen.

In three of our cases the super-maxillary nerve seemed abnormally large, while in the fourth it appeared smaller than usual—about one-third the size witnessed in the other cases. No histological investigations have been attempted.

It occurs so far as observed by us in young or medium aged horses, of good breeding, well fed, very vigorous, high spirited and used lightly or moderately, usually for pleasure riding or driving.

The disease comes on insidiously, and gradually increases in severity to its maximum, when it becomes fixed and permanent. The first symptoms noted, and which constitute the entire symptomatology except increase in severity and frequency, consist of a peculiar shaking of the head as though annoyed by flies about the ears or nostrils which the patient tries to dislodge, rubbing of the upper lip and nose against available obstacles, nervousness, halting at times as though the annoyance was too great to permit of progression. It is seen but little, if any, in the stall, but shows itself while the patient is being ridden or driven. In some, if not all cases, the symptoms are more severe when the animal is driven against the wind, increased velocity of the wind or speed of the animal tending usually to increase the annoyance. Some cases appear to be worse in cold, others in warm weather.

The intensity and frequency of the jerking is variable in different patients and in the same animal at different times during the day or upon different days, but in a well established case the symptoms can in all cases observed by us be developed at will by riding or driving the animal. The motions of the head are peculiar and diagnostic, the animal gives a sudden jerk of the head, the nose being quickly thrown forward and backward and if a convenient object be present the upper lip or nose is rubbed against it as if to dislodge an insect which was causing acute, stinging pain.

If being driven double the upper lip may be rubbed against the pole, neck yoke or in a severe paroxysm the patient will halt in its gait and, turning its head toward its mate, rub its

nose so vigorously against the collar or neck of its fellow as to push it out of the road unless prevented by the driver. At times and to other observers the seat of irritation seems to be the ears or poll, the ears being moved rapidly, the head all the while being jerked up and down, and right and left. At times the patient becomes frantic and almost unmanageable.

In one case a net worn over the muzzle palliated the affection while in others it produced no effect whatever.

Physical inspection of nose, ears, mouth, teeth, and adjacent parts gives negative results, while clipping the hairs from the inner side of the external ear, extracting "wolf" teeth, filing molars and other expedients suggested or desired by owners have in our observations induced no effect.

Our treatment for the malady consists in neurectomy of the infra-orbital portion of the super-maxillary division of the tri-facial nerve.

The technique of our operation, though tentative, is workable and not difficult for any ordinary veterinarian. The instruments required consist of two scalpels, two tenaculæ, razor, scissors, aneurism needle, compression artery forceps, needles, sutures, sponges, or absorbent cotton and a piece of heavy muslin about four inches square.

The animal is prepared by the usual restriction in diet, and the operation field is to be shaved, cleansed and disinfected. The patient is secured in the lateral recumbent position, preferably upon the operating table, and complete chloroform anæsthesia induced. The halter is removed, as well as any other harness or apparatus which can in any way interfere with the operator, or injure the wound. The usual antiseptic or aseptic precautions in relation to the operation field, operator's hands, instruments, and dressing materials are applied. The levator muscle of the upper lip is pushed downwards or ventralwards, as far as practicable, and, beginning just in front or dorsalwards from the muscle, and about one-half inch above the infra-orbital foramen, an incision is extended downwards, parallel, and close to the levator muscle, for a distance of one and one-half to two

inches, dividing entirely the skin and subjacent flat facial muscles. With the aid of the tenaculæ the incision is held well open, while the surrounding parts are carefully dissected away from the nerve, exposing freely all its branches, being careful in freeing the inferior or ventral portions to not wound the facial vessels. The aneurism needle (or a probe-pointed bistoury) is insinuated beneath the nerve and its entire substance cut through immediately against the foramen, with the scalpel or bistoury. Grasping the distal end of the severed nerve with the compression forceps a piece about one inch long is dissected out and excised. The hæmorrhage is now stayed, the wound cleansed and sutured, and the square piece of muslin, well disinfected, is laid over the wound, and each corner sutured firmly to the skin with strong silk.

The patient is then rolled to the opposite side and the operation repeated on the other nerve, except that the square piece of muslin as a temporary protective is not essential and is omitted.

The patient is now permitted to recover from the anæsthesia and get up, the silk sutures holding the protective piece of muslin over the first wound are cut and removed, the wounds properly cleansed and dressed, and the animal given its freedom in a paddock, or box stall, or if necessary to tie, it should be done with a neck strap in preference to the ordinary halter, which cannot well be kept from the wounds.

After two or three days the animal may be returned to work with a properly adjusted bridle, without noseband.

We operated upon our first case without chloroform, relying upon cocaine, which totally failed us, resulting in excruciating pain, the recollection of which made the patient unmanageable for a day or two, and caused great nervousness and suffering, unfavorable conditions which are wholly avoided by the use of chloroform.

In our second case (our first under chloroform) we met with difficulties which served to render our operation incomplete and unsatisfactory. By making our incision on the ventral instead

of dorsal side of the levator muscle we wounded the facial vessels, which with the animal in the lateral recumbent position, bled freely, obscured our operation field, caused us to miss some dorsal twigs of the nerve, and predisposed the wounds to infection, owing to the resulting blood clots. By making the incision on the ventral side of the muscle, wounding the facial vessels is difficult to prevent.

The wounds were injured and infected from contact with the leathern halter which was kept on throughout the operation. The result was severe wound infection, which delayed recovery, while the missing of a part of the nerve made our results imperfect and unsatisfactory, though there was a decided amelioration of symptoms.

The last two cases operated upon according to the technique above suggested were successful from both operative and curative standpoints. With complete anæsthesia, maintained throughout, the animal shows no nervousness from recollection of pain, while the quietness of the patient aids in securing asepsis.

Operating along the dorsal rather than the ventral side of the levator muscle insures more fully the division of the dorsal branches of the nerve, and while division of the ventral parts may not be essential we believe it absolutely necessary to divide the dorsal twigs.

Our first, third and fourth cases recovered from the malady immediately and completely and the results have so far been unaffected by time.

As already stated, the third case was unsatisfactory, no doubt due to faulty operation, but even this one is distinctly improved and the betterment seems inclined to progress rather than retrograde.

We believe a second, corrected operation would cure. The operation will probably prove more free from nutritive disturbances of the enervated parts than observed after neurectomy of the feet and limbs.

Thus far no indication of unfavorable sequelæ of either nutritive, sensory or motor functions have been observed.

We, therefore, feel warranted in recording the operation as one of distinct therapeutic value and to express the hope that other veterinarians will apply the treatment and record their observations, with such suggestions as may develop in respect to etiology and technique.

THE VETERINARIAN AS A NATURALIST.

BY W. H. DALRYMPLE, M. R. C. V. S., BATON ROUGE, LA.

A Paper presented before the Louisiana Society of Naturalists at New Orleans, April 7, 1899.

It affords me a great deal of pleasure to appear before you this evening in the rôle of essayist. I must confess, however, that when asked by our worthy Secretary to prepare a paper, I had some difficulty in deciding upon a subject *apropos* to the society and to the occasion.

It is true, the veterinarian, or might I rather designate him the student of comparative medicine, is brought daily in contact with Nature in many of her phases, and is required to have a sort of conglomerate knowledge concerning her many intricacies; still, when brought face to face with the fact that a paper was expected of me—which I realized would be most acceptable to a society of this nature if along some definite line of work—I was almost about to give up in despair.

The field open to the veterinarian, in the domain of the naturalist, is indeed a very wide and varied one, but to attain to any degree of success along any of the many branches of the work, he must become a specialist. Many such men are to be found to-day in the ranks of the veterinary profession, some of whom have reached a high degree of eminence; but when we consider the large majority of veterinarians who have not the opportunity nor the time to specialize, but who have to keep adding to their store of general knowledge of all subjects pertaining to their professional work, for the purpose of satisfying the demands of a public who expect them to be quite *au fait* in each and every branch of it, the difficulty, or might I rather say,

the impossibility of pursuing any special line of study, must be apparent. It was just such difficulty that seemed to confront me in preparing a paper suitable to be read on such an occasion as this, but there was one thought from which I seemed to obtain a modicum of consolation: There used to be a saying among whist players, to the effect, that "whenever uncertain what to play, always play trumps." Being an ardent devotee of my branch of the healing art, I made the application in this way: If you are undecided as to the choice of a subject, do not lose the opportunity, but say something in behalf of your profession; there are, perhaps, more nature studies embraced by it than by almost any other, and this fact is, as yet, not fully appreciated in our Southern country. Such, then, was a part of the line of argument I advanced to myself, and by which I was led to select as the topic of my paper, the Veterinarian as a Naturalist, which I hope may be at least interesting, if not instructive. We are told by Hoblyn, in his dictionary of terms used in medicine and the collateral sciences, that a naturalist was formerly a denier of revealed truth, of any but natural religion, but now, an investigator, and often a devout one, of Nature and her laws. Placing the construction on the term, as does Hoblyn, the veterinarian ought really to take high rank as a naturalist, and in what follows, I shall endeavor, in as modest a way as possible, to give some of the reasons why.

As all of you are aware, anatomy is the foundation study of all medical work, but, first of all, it may be interesting to note the various animals which come more especially within the scope of the study of the veterinarian. Of course the common domesticated animals all belong to the vertebrate sub-kingdom, and the two classes with which he has chiefly to deal are the aves and the mammalia. As to the orders of the former—the ratitæ and the carinatæ—his attention and study are directed to each. While the orders of the class, mammalia, which claim his attention, are (1) The ungulata, with its sub-orders—the perisso-dactyla and the artiodactyla. Included in the first of these being the horse, ass, mule, zebra, quagga, etc., and in the

second, ruminantia, embracing the ox, sheep, goat, camel, etc., and non-ruminantia, represented by the porcine tribe. To the (2) order of the mammalia—the carnivora—belong the cat, dog, etc.

Going back to the subject of anatomy, or zoöatomy, which means the anatomy of animals, let us for a moment glance at the subsections with which the student of comparative medicine has to be familiar. His first object may be to investigate, exclusively, the structure of a particular species; this is special anatomy. He may desire to bring under observation the structure of different species of animals, in order to trace their points of resemblance, and would then be laboring in the field of comparative anatomy. If concerned with the elementary cells and tissues of which the various organs of the body are built up, his work would be in histological anatomy. And further, if tracing up the succession of forms exhibited by the individual from the date of conception to the period of adult life, he would be making a study of developmental or embryological anatomy. And still further, were the student endeavoring to group together facts relating to structure, in order to discern the natural laws that determine the form of different parts of the body, he would be viewing the subject from a morphological standpoint. These three latter are subdivisions of special anatomy, but there are two distinct ways in which the special anatomy of an animal may be prosecuted. In the first of these, the different groups or systems of similar organs are studied separately, and in order in which one would naturally proceed had we the power to build up an animal. This is termed systematic or descriptive anatomy. By the second method the student would investigate the different structures in the order of their position in the same part of the body, such as he would find them presented in the course of a dissection. This constitutes topographical anatomy. In the first case, he would be proceeding by synthesis; in the second, by analysis, for the purpose of familiarizing himself with the structure of the animal body. So much, then, for a brief allusion to structure.

Being brought daily in contact with pathologic conditions, a knowledge of zoöatomy alone would avail the veterinarian but little, without an acquaintance with normal function. Hence, a knowledge of physiology is absolutely imperative. And, while human physiology is confined to the vital phenomena of man alone, comparative physiology treats, also, of the functions of animals below man, with a consideration of the means by which different functions are accomplished by different animal forms. And, it is only necessary to allude to the animals included in the orders previously mentioned, to give some idea of the extent of the knowledge required of the veterinarian on this subject.

But, although a familiarity with structure and function is of prime importance to the student, he would be poorly equipped did he not possess a knowledge of the various fuel materials, in the form of foods, to run his machine. Foods are, of course, usually dealt with under the head of physiology, but what I desire to bring out here, is, that on account of the greater number of the animals with which the veterinarian has to deal, belonging to the herbivora, and therefore bringing him in close touch with the vegetable world, the study of botany is essential to an intelligent understanding of the subject.

I fancy there is, perhaps, a tendency on the part of some of our medical colleges, both human and veterinary, to disregard this subject, or, at all events, limit it to pharmaceutical botany. There are, however, some of our American schools, and I think, the great majority of the European schools, that give quite an extended course, embracing both the phanerogamia and the cryptogamia; their morphology, physiology, classification, etc. This is another study in the curriculum of the veterinarian which opens up to him an interesting field as a naturalist. But, although his botanical information, on leaving college, may be extensive, he has, as a rule, by force of circumstances, to limit the greater part of that information to the more economic purposes for which his daily professional work calls. This would include the natural orders to which the more common food crops belong, such as: Graminiæ, leguminosæ, cruciferæ, solanacæ,

etc. Besides these he ought, of course, to be familiar with the orders to which the principal vegetable drugs belongs, as : *Atropaciæ*, *papaveraceæ*, *scrofularaceæ*, *liliaceæ*, *ranunculaceæ*, etc. And he ought to be able, from his knowledge of the subject, to recognize noxious and toxic plants which are either known, or supposed to be injurious to the domestic animals. And, in addition to these, his knowledge should extend to a familiarity with the various parasitic and saprophytic vegetable fungi from which the higher orders of plants suffer, and in consequence are depreciated in nutritive value, as well as sometimes rendered dangerous to the health of animals.

So far, then, I have touched briefly upon anatomy and physiology, and incidentally upon botany, but when we come to the subject of pathology, the field again broadens out, since living organisms, in the form of pathogenic bacteria, have been found as the result of patient scientific investigation, to be the chief causative factors in disease. Not only, then, is it necessary for the student of comparative medicine to have a knowledge of the structure and functions of the larger and higher forms of both animal and plant life, but it is imperative, in this age of scientific advancement, that he be familiar, also, with the morphology and physiology of those minute forms which have been found to be responsible for so much destruction to both life and property. If I might be allowed a slight digression at this point, I would like to add, that the close relationship existing between the work of the veterinarian, along bacteriological lines, and the public health, is not, perhaps sufficiently known to be fully appreciated, more especially in the Southern States. In sections of our own country more advanced in the knowledge of this subject, and in European countries, the veterinary profession of to-day is looked upon as an indispensable factor in the conservation of the public health, as well as that immense item of public wealth which is represented by "the cattle upon a thousand hills." It is, however, the knowledge which the modern veterinarian is required to possess relative to diseases of bacterial origin in the lower animals, and which are communicable to the

human family, that I desire to emphasize; and also, of the changes brought about by pathogenic bacteria in the meat and milk supply of our people, which render both inimical as articles of human food.

Included in the study of the morphology and physiology of these schizomycetes, is, of course, their composition, form, movement, peculiarities of reproduction, the phenomena of respiration and nutrition, the circumstances affecting their growth: such as the nature of the soil, temperature, gases, light, etc.; and a very important part of the knowledge required regarding the pathogenic forms, is a familiarity with their chemical products, or the products of the metabolism induced by them, which may be classified as: (1) ptomaines or alkaloids; (2) albumoses or tox-albumins; and (3) enzymes. The first two being directly poisons; the third harmless, except in the presence of proteids, which they are said to be capable of transforming into poisonous albumoses.

Pathology, so far as studying it in these microscopic death-dealers, for the purpose of revivifying and reinstating them in a condition of health and vigor, is, of course, out of the question. Our main object is their destruction; and for this purpose various methods and agents are adopted, which it is unnecessary to mention on this occasion; but I might allude, just in a word, to the fact, that in many instances these very pathogenic organisms have been and are being utilized for the production of a therapeutic agent peculiar to each—by which the disease, of which they are the specific cause, can be prevented and often cured. These are the anti-toxins and vaccines; and we are all more or less familiar with records concerning vaccination in small-pox, and serum-therapy in diphtheria, tetanus, and some other hitherto most fatal ailments.

The word *germ*, in the ordinary acceptation of the term, seems always to carry with it the stigma of disease, but we must not forget, that, although the pathogenic forms are both plentiful and ubiquitous, to a large extent, there are immense numbers of bacteria that are harmless, and many that are really of commer-

cial or economic value. Our plants receive their nourishment through their agency; our butter is flavored by them; the ripening of the cream to make our butter, and the ripening of our cheese are all phenomena brought about by fermentation, the work of micro-organismal life, and so on, The study of bacteria, then, in which there is a life-work for the naturalist, is also embraced in the educational curriculum of the veterinarian; but in this, as in other branches of work, to become thoroughly informed, he must specialize, and this is not convenient in every case. Bacteriology, however, is one of, if not the most important branch of medical science, and is just as valuable and necessary in its application to veterinary sanitary science, as it is in its relation to health and disease amongst the human family.

But, besides the requirements of a familiarity with this most important group of parasites belonging to the vegetable kingdom (phytoparasites), there are three sections of the animal kingdom containing parasites (zoöparasites) of the domestic animals, some of which, from a pathologic standpoint, may be considered of almost equal importance, for the reason that some of the members of at least one of the sections, in certain stages of their life-history, are not only pathogenic in the lower animals, but in the human family also. I refer to the protozoa, the entozoa, and arthropodes. Here, again, we have a study which furnishes an abundance of material for the naturalist along special lines.

When touching upon the subject of botany, I made general allusion to parasitic vegetable fungi. I might here make special of one or two groups with which we come in contact in the study and practice of comparative pathology, viz.:

(1) The dermatophytes, as the *trichophyton tonsurans*, and the *achorion schonleinii*, which live on the skin; the former producing *tænia tonsurans*, or common ringworm, the latter, *favus* or honeycomb ringworm.

(2) The *saccharomycetes*, as the *odidium albicans*, which infest the upper portions of the digestive canal, and produce what is known as parasitic stomatitis; also the *saccharomycetes* gut-

tulatus, sometimes found in the digestive canal of various herbivora.

(3) The haplococcus reticulatus, a parasite of the muscular tissues of the hog, and

(4) Several kinds of aspergillus, "moulds," belonging to the perisporiæ, which may develop in the air-passages of birds and of some mammals. There are of course, others, but the above will suffice, as we have not the time for more than passing reference.

Of the protozoa, only three classes contain parasites of the domesticated animals. These are the amoeba, sporozoa, and infusoria. Of the first of these is the "amoeba parasitica," which has been discovered in ulcers in the lips and feet of sheep. The coccidia and the sarcosporidiæ, belonging to the psorospermia, are the principal representatives of the sporozoa affecting the work of the veterinarian. The coccidiæ chiefly infest the digestive canal; the sarcosporidiæ being found exclusively in muscular tissue.

The infusoria found in the domestic animals, and observed more particularly in the alimentary tract or its accessories, belong to the sub-class flagellata or ciliata. We have also the "pyrosoma bigeminum" of tick fever which is a protozoon.

The second section of the zoöparasites requiring our attention: the entozoa, vermes, or helminths, is made up of an immense collection, and are usually divided into two classes, viz.: the plathelminths, with bodies generally flat; and the nemathelminths, whose bodies are nearly cylindrical.

The plathelminths comprise the following three orders: Cestodes, trematodes, and turbellaries. The first two, however, are limited to a parasitic existence. To the first of these belong the tæniæ or tapes, and their life-histories form an interesting study from the standpoint of the naturalist as well as that of the pathologist. In the adult stage they exist in the intestines of the higher animals, but in the immature stages they undergo a certain number of metamorphoses and migrations, which are often brought about in the most diverse organs of different hosts.

It may be of interest to note a few of the tapes of the various domestic animals; and it may be stated, that although a number of these plathelminths are known in the adult stage to be peculiar to different animals. this is not the case, in every instance, with regard to their cystic or hydatid form.

In the alimentary canal of the equidæ, three species of *tænia* have been observed, but, so far, nothing whatever is known of their cystic form. These are; The *tænia plicata*, the *tænia mamillana*, and the *tænia perfoliata*.

Cattle, also, have three species, and like those of the equidæ, they are entirely unknown in their cystic form. They are the *tænia alba*, the *tænia expansa*, and the *tænia denticulata*.

It is said, that, after the dog, the sheep most frequently harbors the greatest number of *tæniæ* in its intestines. Those of this ruminant belong to eight distinct species, all of their cystic forms being unknown. They are as follows: The *tænia expansa* and the *tænia alba*, both of which are common to the ox and sheep. The *tænia fimbriata*, the *tænia benedeni*, the *tænia vogti*, *tænia ovilla*, *tænia centripunctata*, and *tænia globipunctata*.

It seems rather wonderful to remark, that although the hog harbors a large number of intestinal parasites, up to the present, according to Neumann, no adult form of cestode has been observed in it.

When we come to the dog, however, it is said of him that he is the favorite host of tape worms; eight species being put down as his share, and of which the greater number of the cystic forms *are* known. The *tænia serrata* has its cystic form in the *cysticercus pisiformis*, frequently found in the peritoneal cavity of hares, and also domestic, or wild rabbits. The *tænia marginata*, whose cystic form is the *cysticercus tenuicollis*, found in the peritoneal, and occasionally in the pleural cavity, more especially of domestic ruminants. The *tænia echinococcus*, cystic form the *echinonococcus veterinorum*, found in most of the organs of the herbivora, and even in man, but more frequently observed in the liver and lungs of ruminants and the hog. The

tænia cucumerina or *tænia canina*, whose cystic form was for long unknown until it was discovered in 1869, in the body of the dog-louse, the "*trichodectes latus*." The *tænia litterata*, the cystic form of which, I believe, is unknown. And, the *tænia coenurus*, whose hydatid form is developed in the cerebro-spinal cavity of the sheep.

The digestive canal of the cat affords asylum to three species of *tænia*: The *tænia crassicollis*, cystic form the *cysticercus fasciolaris*, found in the liver of mice, and of various kinds of rats. The *tænia elliptica* and the *tænia litterata*, the latter being confounded with the *tænia* of the dog bearing that name.

These may be said to be the principal *tæniæ* found in the domestic animals, in the adult stage, but, as some hydatid forms, found in the muscles of our meat animals, develop into mature tapes in the human being, through the consumption of what is known as "measly flesh," it may be interesting, as well as instructive, from a public health standpoint, to allude to two *tæniæ* which infest man. These are the *tænia solium*, and the *tænia mediocanellata* or *saginata*. The cystic stage of the former of these parasites of man is the *cysticercus cellulosæ*, and is found in this form imbedded in the muscular tissues of the hog, and when this article of food is imperfectly cooked, or, at least, not sufficiently so to destroy the hydatid, the latter develops, in the human digestive canal, into the mature tape, the *tænia solium*. The second, the *tænia mediocanellata* or *tænia saganata*, of the human family, has its cystic form, the *cysticercus bovis*, in the flesh of the ox tribe; and when this is partaken of in a somewhat rare condition, with the hydatids remaining possessed of vitality, *tæniasis* is produced, as in the former mentioned case. This fact ought to give emphasis to the urgent necessity for careful meat inspection by properly qualified individuals.

As the study of the entozoa is one of interest to the naturalist, may be pardoned for pursuing the subject a little further.

The second variety of the plathelminths are the trematodes; and those of chief importance to the veterinarian belong to the

sub-order; distomata. The principal species of distomes of the domestic animals infest the liver, and the hepatic form is, therefore, the most important, the first place being taken by the *distoma hepaticum*; the *distoma lanceolatum*, perhaps, taking a secondary position. The former species is pre-eminently a parasite of ruminants, and, as the name would indicate, is most frequently found in the bile ducts. The *lanceolatum* is often observed along with the *hepaticum* in ruminating animals, but it has also been observed in the rabbit, hare, pig, ass, dog, cat, and man. We have also the *distoma texanicum*, found in Texas cattle, and described by the veterinarian of the Texas Experiment Station, Dr. Francis, a year or two ago. The life-history of these parasites is extremely interesting, but time will hardly permit of our taking it up at present.

Coming now to the second class, under the head of entozoa, we have the nemathelminths or round worms, which comprise two orders. These are the *acanthocephali* and the *nematodes*. The former include only the *echinorhyncus*, which in the adult stage lives in the digestive canal of vertebrates; but the latter are numerous, and are found in all the organs of the domestic animals, with the exception of the bones and the nervous system. The following are some of the principal nematodes of the various domesticated animals: In the horse, we have the *oxyuris curvula*, found in the cæcum and colon. The *ascaris megalocephala*, probably the most common internal parasite of the horse. The *spiroptera megastoma*, found encysted in tumors in the walls of the stomach. The *strongylus armatus*, found in the blood-vessels, sometimes in the heart, but chiefly in the anterior mesenteric artery. The *sclerostoma tetracanthum*, found in the cæcum and colon. The *eustrongylus gigas*, found in the bladder, kidneys, and tissues of the perineal region. The *filaria lachrymalis*, found in the lachrymal duct. And, *filaria papillosa*, found in various locations in the body, and occasionally occupying the anterior chamber of the eye.

Among the nematodes of the ox, we find the following: The *ascaris lumbricoides*, in the small intestine. The *strongylus*

radiatus, ventricosus, and inflatus, in the stomach and intestines. The strongylus micrurus, in the trachea and bronchi. The eu-strongylus gigas, filaria lachrymalis and papillosa, common also to the horse. And, spiroptera scutata œsophagea bovis, found in the œsophagus. This has been given a new genus by Stiles of the Bureau of Animal Industry, viz.: Myzomimus, and the parasite, the myzomimus scutata.

The sheep also harbors a number of round worms, the most common being the strongylus filaria, in the trachea, bronchial tubes, and parenchyma of the lung. The strongylus contortus, found in the abomasum. The strongylus filicollis and dochmius hypostomus, in the intestines. And, tricocephalus affinis, in the cæcum, and sometimes in other portions of the intestines.

The pig or hog, is the host of the following parasites of this class: The ascaris lumbricoides, sometimes named the ascaris suilla, found in the intestines. The tricocephalus crenatus, also in the intestines. The spiroptera strongylina, in the walls of the stomach. The stephanurus dentatus, in the adipose tissue round the kidney. The sclerostomum dentatum and the echinorhyncus gigas, in the small intestines. The strongylus paradoxus, in the lungs. And, the trichina spiralis, imbedded in the muscles. This nematode, although one of the smallest of the intestinal parasites, requires more than merely a passing notice, as it is responsible for the disease in the human being known as trichinosis, trichiniasis, or "flesh-worm-disease." it exists in two distinct forms, viz.: the partially developed or encysted, and the fully developed or intestinal. The following is a short history of the trichina: In a partially developed state it is found encysted in the muscles of the hog. Here it is sexually immature, but when the human subject partakes of the flesh imperfectly cooked, in the stomach the cyst wall is ruptured, the embryo escapes, and in 48 hours it becomes sexually mature. Coition takes place, and in about 8 days after entering the stomach, young are born viviparously, they commence to migrate, entering the muscular tissues of the abdomen chiefly, and there become encysted. During migration they cause an

amount of disturbance which is sometimes fatal in the human subject.

The following nematodes are found in the digestive canal of the dog: The *ascaris marginata*, *spiroptera sanguinolenta*, *tricocephalus affinis*, *tricocephalus depressiusculus*, and *dochmius trigonocephalus*. The *tricosoma plica*, is found in the bladder. The *filaria immitis*, in the heart and blood-vessels. And, the *filaria trispinulosa*, in the capsule of the crystalline lens.

I have not alluded to the intestinal parasites of poultry, but I might just mention that something like 10 species of cestodes, 7 trematodes, and about 10 nematodes have been described.

The third section, or arthropodes, I will merely touch upon, as I have already occupied too much time. Of the four classes: crustacea, arachnidæ, myriapodes, and insects, the arachnidæ and insects alone contain species which are parasitic in the domestic animals. I cannot afford to go further into this section, as it would only lead me deeper into a subject, with which, although of intense interest from a natural history standpoint, I have already taken up considerable time.

I must confess, Mr. President, that when I commenced this paper I felt extremely doubtful as to my ability to put enough into it to occupy more than ten or fifteen minutes reading, but the subject is so comprehensive and expansive, that as I became more interested in it, there seemed to be much more difficulty in knowing just when to stop, than what more to say. There is a great deal more that could be said, however, but I must now draw to a close. I must repeat what I said at the commencement: that the veterinarian, as a rule, has rarely an opportunity to specialize. The calls upon his services are of such a general and diverse character, that he has to be "all things to all men," so to speak. He may be asked one minute to prescribe for a dyspeptic cat, the pride and joy of some fastidious old maid; the next, to investigate, control, and eradicate an epizootic of some contagious disease, and the next, perhaps, to perform some delicate piece of ocular or laryngeal surgery. To

meet such varied demands, he is compelled, however, to keep abreast of what is going on in the numerous branches of modern medicine and surgery. And, beside studying the nature of the animals with which he has to deal, he will, if he is wise, make a more or less careful study of human nature as well, for it is frequently the case that the owner is much more difficult to treat than is his animal.

I trust the society will overlook any seeming tendency to veterinary professionalism on my part, in the "make up" of this paper. To convey such an impression is the farthest from my intention. What I desire, is, simply to show, that with a curriculum of study made up of such subjects as those to which I have made brief allusion, and a great many more which I have not mentioned, if the modern graduate, from our most reputable veterinary schools, is not *somewhat* of a naturalist, I think you will agree with me, that he, at least, *ought* to be.

PUERPERAL SEPTICÆMIA.

(MILK FEVER—PARTURIENT APOPLEXY.)

BY F. L. STEVENS, B. S., V. S., MAINE.

A Paper read before the Maine Veterinary Medical Association, October 13, 1898.

There is probably no disease in the whole range of veterinary practice, especially among rural practitioners, which is so important and which gives the veterinarian so little satisfaction in its treatment as the one before us for consideration at this time. Entailing as it does upon the dairyman the loss of the most valuable animals, and the almost helpless condition of the veterinarian when called to attend such cases, make it a disease alike dreaded by the stockman and the veterinary practitioner.

I have used the term "Puerperal Septicæmia" because I believe it expresses the pathological condition in this disease better than such expressions as milk fever, parturient fever, puerperal eclampsia, parturient apoplexy, etc. Such terms are misleading and only tend to confuse, simply expressing different forms or stages of the same disease.

Nearly every intelligent veterinarian has his own theory as to its pathology; but the utter lack of reliable and controllable therapeutics which will save anything more than a very small percentage of cases would indicate that its true etiology and therapeutics are really as little known as that of azoturia.

I have read with much interest the various articles which have appeared upon this subject, from time to time, in our veterinary periodicals, and it would appear from them and the literature upon the subject that there has been, and is at the present time, a great diversity of opinion as to its pathology and therapeutics. Without presuming to offer anything new to the profession upon this subject, but rather for the purpose of bringing it before you for intelligent discussion—a free expression of the opinion and the experience of the members of this association upon so important a matter—is the purpose of this paper.

The various theories as to the etiology and pathology of this disease are probably familiar to you all. Among the older theories may be mentioned that of Harnes, according to which this disease was caused by the introduction of air into the blood vessels at the time of parturition, this producing progressive cerebral anæmia and paresis. This theory being unable to withstand scientific criticism is now generally abandoned. The still older theories of Bentele and Born explained the phenomena of milk fever as a lacteal metastasis. They are said to have observed in some instances milky urine from the kidneys, milky peritoneal contents and lactiform nasal discharges, but these lesions were undoubtedly, as Friedberger and Fröhner remark, due to metastatic nephritis, peritonitis or to pneumonia occurring during the course of pyæmia. According to Franck's theory, this disease essentially consists of cerebral congestion followed by an encephalic œdema and anæmia, which is brought about by a too abrupt contraction of the uterus, and produces a general nervous depression and paralytic symptoms.

This theory withstood the scientific criticism for years, and

was generally accepted throughout Europe. It has, however, recently been successfully combatted by Schmidt and Muhlheim, who in place of Franck's theory believe that the paralytic form of vitular fever is due to a poisoning by an absorption into the system of various ptomaines similar to the poisoning which sometimes occurs in man through the consumption of certain meats and sausages—a condition known as *botulism*. It is the assumption of these authorities that septic intoxication takes place through the uterus, and that the ptomaines resulting from the rapid multiplication of the septic microbes in the lochia of the occluded uterus, is the exciting cause of this fatal disease.

This I believe to be the true etiology of the so-called milk-fever, parturient apoplexy, puerperal paresis, parturient eclampsia or whatever name may be employed to express the conditions under consideration. It is evident, however, that if this hypothesis as to its etiology is correct, that the more correct and expressive term is puerperal septicæmia and I believe that as its pathology becomes better understood this term will commend itself to all.

Septicæmia is defined in a general way as the pathological condition which follows the penetration of putrid matters into the system. Now, as putrefaction is a complex fermentation which takes place only through the intervention of microbes, it is evident that septicæmia cannot exist, unless artificially produced, without the presence in the system of microbes producing ptomaines or toxines resulting from their proliferation.

The microbes which give rise to septicæmia are various, and, according to the work on microbiology by Mosselmann and Lienaux, the pyogenic germs can also give rise to septicæmia. According to the above authority, the streptococcus pyogenes aureus is the cause of puerperal fever, also the staphylococcus pyogenes aureus has been found in the blood in several cases of septicæmia. In such cases the virulence of these germs is very great and death follows too quickly to allow the formation of pus.

We thus see puerperal fever under three distinct forms in which the streptococcus is always found. It sometimes takes the form of a true septicæmia, quickly leading to death. At other times the patient succumbs with an abscess of the large ligaments and generalization of streptococcus without occasioning new abscesses, and finally the disease sometimes evolves comparatively slowly, assuming the character of pyæmia, with multiple streptococcus abscesses.

That the genital tract, and especially the uterus, immediately after parturition, forms an excellent location for the multiplication of the microbes of putrefaction is self-evident and needs no argument. Fröhner and Friedberger in their excellent work have covered the whole ground, but there is one important fact which I have observed in each of the three cases that I have carefully examined during the past few months and which I do not see mentioned by any of the works on the subject, or if mentioned no stress is laid upon the point. I refer to the fact that while the uterus is not usually contracted, and the os not always closed tightly, yet in every case of puerperal septicæmia that I have examined the os uteri was absolutely occluded by a gelatinous exudate which required considerable labor to remove before an entrance to the womb could be effected.

Now, as most of the germs producing septicæmia are anaerobic, especially the streptococcus pyogenes aureus, which according to Mosselmann and Lienaux is the microbe producing puerperal septicæmia and cannot multiply in the presence of oxygen this would appear to be a condition absolutely essential to the production of puerperal septicæmia.

Without this occlusion of the os it might be urged that the uterus could not be the seat of septic infection or intoxication from the fact that the microbe producing it, being anaerobic, could not exist and undergo proliferation under such conditions. Whether this occlusion of the os is constant in cases of this kind, I am unable to say, but, so far as I have observed, this condition is always present.

Etiology.—The exciting cause of the disease then, we must regard as the entrance and proliferation of the septic germ into the uterus or uterine passages and the absorption therefrom of the resultant toxins or ptomaines. The various conditions, such as heavy milkers, plethora, mature age, season, etc., can only be regarded as accessory or predisposing causes.

Pathological Anatomy.—We find the blood usually dark in color and coagulates with difficulty. We find, unless the course of the disease has been extremely rapid, ulcerations and dark spots upon the mucous membrane of the vagina, the os uteri and the uterus; small extravasations of blood beneath the pericardium; the mucous membrane of the digestive canal usually congested; the uterus not contracted and soft and flabby; the os, if not contracted, firmly closed by a gelatinous exudate. The uterus usually contains decomposing organic matter and the mucous membrane is in some varieties of the disease of a dirty brown or greenish black color, covered with ulcerations and coated with an ichorous or fœtid pus. The lymphatic vessels and the thrombosed veins are filled with pus. The viscera are usually filled with venous blood due to enfeebled cardiac action. If the disease is of several days' duration the peritoneal coating of the uterus, the pelvis and sometimes the whole peritoneum show lesions of serous, purulent or putrid inflammation.

Symptoms.—These are unmistakable. Rumination ceases, there is paddling with the hind feet, secretion of milk ceases. There is contraction of the abdominal walls, the animal makes violent expulsive efforts, arches the tail, stamps, there is paralysis of the posterior limbs and later decubitus, rapid respiration, elevated temperature, except in the apoplectic form, when the temperature is usually below normal. Pulse varies from 80° to 120° per minute; there is a tendency for the head to rest upon the flank or side, due to the tonic contraction of the cervical muscles. Muzzle sometimes moist and at other times dry. Bowels torpid or constipated, retention of urine.

The severity of these symptoms depends upon the amount

of the toxines absorbed from the seat of the infection, and the resistance offered by the animal organism to the poison.

Treatment.—Basing our treatment upon the foregoing etiology and pathology, the indications are to immediately open the os uteri and thoroughly clean out the uterus, removing the gelatinous exudate and decomposing animal matter. This allows the introduction of air into the womb and interferes with the proliferation of the anaerobic microbes and the consequent further production and absorption of the ptomaines. The uterus should then be thoroughly washed out with a five per cent. solution of creolin or a one per cent. solution of cresylic acid. These agents are non-irritant and non-poisonous and are much to be preferred to the poisonous corrosive sublimate or carbolic solution. Support the animal on the sternum with bundles of straw with the head in an upright position if possible. If deglutition is not impossible give a cathartic of aloes and calomel in bolus. If the muscles of deglutition are paralyzed so as to render a bolus unsafe use eserine. Relieve the bowels with copious warm water injections to which has been added a few ounces of glycerine. Draw the urine.

In the earlier stages I find that aconite $\frac{3}{4}$ ss, fl. ext. belladonna $\frac{3}{4}$ i and alcohol $\frac{3}{4}$ iiss, giving two teaspoonfuls of this mixture every hour for four or five hours, works well. Then shove stimulants, and in my experience nothing works better than whiskey, and I believe this should be pushed nearly to the point of producing intoxication in the patient.

During the past summer I have treated three cases, using the treatment outlined above. Two of these resulted in recovery and the other cow, in which case I gave a rather doubtful prognosis to the owner, was converted into beef, and, against my protest, shipped to the Brighton markets for consumption; the owner preferring to realize something on his animal to the risk of suffering a total loss.

I am aware, gentlemen, that there is another theory as to the seat of infection in this disease and a new treatment based upon this theory is claiming the attention of veterinarians

throughout the world. I refer to the recent theory of Veterinarian Schmidt of Kolding, who claims that the cause of the disease is located in the udder, which by the sudden increase of lactation after birth loosens large masses of glandular cells or colostrum and these undergo a decomposition and form toxines and being absorbed into the circulation result in auto-intoxication. Basing his therapy upon this theory, he directs his treatment to the udder and endeavors to lessen the abnormally high milk secretion. His treatment is said to be followed by the most gratifying results; 46 out of 50 cases so treated are said to have recovered.

When I read the admirable article of Olof Schwarzkopf upon this new treatment which he read before the last meeting of the New York State Veterinary Society, I was struck by his remark: "True, there are practitioners who believe they have found a 'sure cure,' but sooner or later they will find, as we all have found, that at one time we may be quite lucky with a certain kind of treatment, while the second or third time we may be decidedly unlucky."

As you are all probably familiar with the article above mentioned and the details of the new treatment therein given, you will probably watch with much interest, as I am sure I shall, the results obtained from its use. Not having had an opportunity as yet to try the new treatment I am not in a position to criticise it or express an opinion as to its efficiency.

SERUM AS A REMEDY FOR HOG CHOLERA.

By J. D. SPRAGUE, V. S., DAVID CITY, NEBR.

A Paper read before the Nebraska Veterinary Medical Association, February 21, 1899.

Since the introduction of the use of blood serum as a therapeutical agent, and particularly since Dr. A. T. Peters applied it in the treatment of hog cholera, stock raisers and veterinarians have looked forward with much interest to the merits or demerits of the system.

No doubt this is of much less interest to the city veteri-

narian ; but to us who are located in the country districts this disease has been the source of much annoyance. It is very embarrassing to be approached by a client relating his experience and describing minutely the symptoms of so common a disease, or, what is more common to have him say, "My hogs have cholera," or, "My cattle are dying in the stalks," and asking you for advice in preventing further loss. I say it is very embarrassing indeed in such a case to try to content yourself or satisfy your client by telling him this disease is due to a living organism, a microbe, germ, etc., or that the cause is not definitely known, and the only relief to be obtained is for him to change his herd to another pasture, separate the healthy from the infected animals, disinfect the pens, etc., and as a last resort throw them on the market at whatever they will bring.

You are beaten out of your visit, your counsel is given without compensation, for you consider it of little value, and the farmer returns to his scene of trouble, brooding over his misfortunes, and wondering what the veterinary profession is anyway, if they are so ignorant as to know nothing of such diseases, or if so indifferent as to give it no investigation, in many cases making up his mind that where he can best use the veterinarian is where he can get along without him.

I have often heard it said that cholera only furnished the market for the surplus hogs and that a cure or prevention of the disease would be detrimental rather than beneficial to the hog raiser, on the theory that it would reduce the market price. But no doubt the price in this case would be regulated just as it is with all other products. We all know that the greatest drawback to hog raising is the uncertainty of getting the animals to market, and anything that will relieve this uncertainty would naturally be a great benefit. And as for the profession, how much better would it be if in such cases we could say, "yes, we recognize the trouble and by the application of such and such treatment we may be able to prevent further spread of the disease and perhaps cure a certain per cent. of the infected animals and thereby reduce the loss to a minimum." He not only pays

your bill and looks pleasant, but it also raises you in his estimation and likewise convinces him of the fact that the men following the profession are worthy of the name.

And while there may be but little or no financial returns directly in the treatment of the hogs, yet I am quite sure that most any country practitioner can well afford to treat the hogs as well as the other animals.

It is not my intention to theorize upon the curative properties of hog cholera antitoxin from a scientific standpoint, that is, whether or not its action is due to ptomaines, leucomaines or to some peculiar action of the phagocytes; or what action it has upon the blood of the animal treated, to render it immune. For bacteriologists alone are capable of dealing with such questions and they know little enough about this particular one.

But what interests us most is, will the use of serum in hog cholera be practical? And what little I say along this line will be from observations made in the use of it during the last two years. I will roughly review my use of it in the different herds:

Lot I. 100 head free from disease at the time of inoculation and remained so, but as we never knew of their being exposed to the infection it furnished no evidence of the efficiency of the remedy.

Lot II. 20 head free from the disease at the time of treatment were placed in infected pens. All remained well for two months, when one died after a few days illness.

Lot III. 30 head healthy hogs treated and in ten days placed in pens where owner had lost all of his hogs three months prior. All remained healthy.

Lot IV. Badly infected herd of 80 head; treated 40 and separated them from the balance of the herd; 10 of the treated and 25 of those not treated died.

Lot V. 45 head of pigs generally infected, but unknown to the owner, were placed in pens with 55 healthy hogs. In 5 days 2 of the 45 head died and most of the others with 2 of the 55 head showed plainly symptoms of cholera. These were removed to

another pen and the entire 98 head treated with serum. None died until the third day after treatment, when those of the infected lot began dying, the disease taking its regular course. This continued for several days, when I gave the infected ones another injection of serum. None died until the third day after the second injection, when they again began dying. I then repeated the inoculation, which seemed to check the disease again for three days, when they began dying and continued until the entire 45 with 2 of the 55 were dead. The 53 remained perfectly healthy. About 10 days after the first treatment, one of the healthy animals which had become slightly crippled in some way was placed with the sick ones. This remained well, and after the sick ones had all died it was replaced with the original bunch.

Lot VI. Treated 60 head in feed lot containing about 150 head. A few were dying with symptoms of cholera. Very few of the treated animals died, but owing to many of the original hogs being taken out and replaced by others the per cent. could not be obtained.

Lot VII. 18 head that were left of a bunch of about 50, the others having died of cholera. These were each given one dose of serum. The second day about one-half of them were given a second dose; the third day those presenting the worst symptoms were again treated and on the fourth day the same. None died until about one week after treatment. At this time some of them showed symptoms of being worse and 4 died, 14 making a nice recovery.

You will notice that in some cases I have been repeating the doses. In the next experiment, Lot 8, I have taken extra care to ascertain if there is any benefit in so doing; selected subjects in which the symptoms were well marked from an infected herd. These were separated from the balance of the herd and treated once daily until showing improvement or dying. Treated 17 head, four of them dying. Four of the herd not treated also died. Some only required 2 doses, while one took ten. Two of the four which died died with symptoms of cholera,

one of pneumonia and one apparently from septicæmia. This last one was the subject given 10 doses of serum.

The tenth day after beginning treatment the symptoms of cholera had disappeared, but the subject did not improve as it should, but instead continued to grow thinner and weaker until death. It is my opinion that death in this case was due to too much serum, but had it not been used death would probably have been produced by cholera. As I have said, one of this lot died of pneumonia and it is in such cases as this where there is a development of some local affection that the use of serum is most often condemned, for hog cholera antitoxin will not cure these complications.

It is a well-known fact that one of the characteristics of this disease is its liability to affect any organ of the entire body. This peculiarity is perhaps due to the greatly contaminated condition of the blood, together with the functional sympathy of the internal organs. And I have often thought, too, there is a tendency for the bacilli to accumulate at the seat of any local pyperæmia.

Through this condition of the blood the function of some organ becomes perverted, which may by functional sympathy derange the function of some other organ. This condition may then be followed by congestion and even inflammation of the parts, which, no doubt furnishing a more suitable soil for their propagation, causes the bacilli to accumulate and multiply very rapidly, creating or increasing the already existing local inflammation, thereby producing pneumonia, enteritis, nephritis, or whatever it may be, depending upon the location. After most any of these local affections have become well established the germ of hog cholera may be destroyed and the animal succumb from the local trouble. For this reason serum in many cases fails to have the desired effect. I mention this to show the necessity of sanitation and early treatment in order to be successful, for any unsanitary surroundings with the neglect of treatment for a few days may be all that is necessary for the development of such complications which might have been avoided.

In treating an outbreak of cholera I think it is best to begin as soon as you discover the disease. Give each animal of the herd one inoculation. Separate the sick from the balance of the herd and repeat the treatment upon these and any others that may show acute symptoms, once a day for 2 to 4 days, depending upon the severity of the symptoms. If the herd is very badly infected I think it best to change the entire herd to another yard. The dose I have been giving is about 10 cc. to 100 pounds of hog in large hogs and never giving less than that in smaller ones. I think it best to insert the needle deeply into the inguinal region, for when injected just under the skin one-third to one-half of the dose will return through the opening made by the needle and I have never seen an abscess form in this region. While the results of some experiments are not as satisfactory as we desire, yet I believe if the serum be properly administered and we exercise as much judgment and use the same precaution in the treatment of this disease as we do of others we will have very favorable returns and save perhaps 80 per cent. of the infected herds.

Some of my statements may not concur fully with the ideas of Dr. Peters and some other authorities, but I wish it understood that they are only my opinions and I do not pose as authority. I have made some other experiments in the last two weeks, among them repeated inoculation in healthy animals as a preventive measure, but am sorry sufficient time has not elapsed to observe their effects.

THE POTASSIUM IODIDE TREATMENT FOR PARTURIENT PARESIS.

By J. E. BROWN, V. S., OSKALOOSA, IOWA.

I have been greatly interested in the reports recently given in the REVIEW on this subject. I have been equally disappointed with the results obtained by my own efforts with it, for they are a long way from being as satisfactory as most of the reports given would lead one to expect. I wish we could have

a report from each practitioner who has used the treatment, for I know there are a good many practitioners in whose hands the treatment has not been a success, but if we only get reports from those having had good results the impression that goes out is incorrect.

I have tried to study out why it is that the treatment has apparently been successful in some hands and unsuccessful in others. In the majority of cases, I do not believe the unsucccess is the result of carelessness of application. In my own case I am sure it is not, and I can only solve the problem, then, with the thought that the difference is in the severity of the cases.

I notice in many of the cases reported that the disease did not attack the cows until from the second to the fourth day after the calf birth. Also, that the reports say, "could *scarcely* hold her head up," etc. We know that the cases that come on, or develop early after the birth of the calf are the most severe, and that as more time intervenes between the time of birth and the appearance of the disease, the more mild is the attack.

I do not know of any reason why the disease should be any more severe or deadly in its attack on Iowa cattle, or on the cattle of this particular section than any other, but I do know that a very large per cent. of the cases that I see are those in which the attack comes on during the first twenty-four hours, and instead of "scarcely being able to hold up their heads," they are stretched out broadside on the ground, and more than likely in the blazing hot sun.

In one report the author says he finds it unnecessary to use any other treatment. In fully seventy-five per cent. of the cases that I treat I find them more or less tympanitic, and demanding special treatment for that condition.

In January, 1898, through the kindness of a friend who had been in correspondence with Dr. Schmidt, I learned of his treatment before it was generally known in this country. Early in the year I tried it on a few cases, but the results were not gratifying. I had been using the intravenous injection of a salt solution, with apparently better success than any other

treatment that I had tried. I then concluded that if there was any virtue in potassium iodide in treating "milk fever" I would combine the two forms of treatment by dissolving the potassium in the salt solution and inject intravenously instead of in the udder. That treatment seemed to act nicely with several bad cases, but later everything died that I attempted to use it on. Then the good reports from the udder injections again prompted me to take up that form of treatment and give it another trial.

I have just recently used this treatment on eight cases, three of which recovered and the other five died.

No. I.—This case came down with the disease the next day after the calf was born. I saw her in the evening; she could not get up. In addition to using the potassium iodide solution, fluid extract of digitalis was used in small repeated doses, for the pulse was very weak. Twenty-four hours later there was no improvement, and the potassium iodide solution was repeated. This case died the next day.

No. II.—This cow was down, but could hold her head up. The attack came on next day after calving. I saw her soon after the disease was noticeable, and made the injection. There was some bloating and sodii hyposulph. was given. The case improved slowly and got up two days later, and finally recovered.

No. III.—Cow was down, but would hold up her head at times, was considerably bloated when I saw her. The attack came on about twenty hours after the calf's birth. Treatment was begun two or three hours later. Pot. iod. in solution was injected, and sodii hyposulphite left to be given as necessary. Also fluid extract digitalis. During the first eighteen hours the case seemed to improve, then got worse, and the injection of pot. iod. was repeated. For a time there seemed to be improvement again, but it was of short duration, and the cow died the next day.

No. IV.—This cow was found down in the morning after having her calf the day before, and treatment was begun three

hours later. She was sprawled out broadside on the ground, and quite badly bloated, I used the trocar, and gave caffein as a stimulant. Then injected the pot. iod. solution, and left sodii hyposulphite to be given. This cow also was given a few doses of whiskey. The next morning the cow could hold her head up and noticed the other stock that came near her. The injection was repeated. Improvement continued, but she did not get up until the third day. She finally recovered.

No. V.—Was not down when I got to her, but fell while I was there. She had been fresh about two days. The pot. iod. in solution was injected, and as she was somewhat bloated, I left sod. hyposulphite to be given. The cow seemed better the next morning, but could not get up. Toward noon she got worse, and I saw her again soon after noon. Repeated the injection, and in the evening she got up. She made a gradual recovery.

No. VI.—Was found with her calf in the field in the morning. Was noticed to stagger that evening, but the owner "did not think much of it." The next morning she was down. When I got there she was floundering around and was badly bloated; could not support her head. The tympanitic condition was relieved with the trocar. Caffein given as a stimulant, and the pot. iod. in solution injected; sod. hyposulphite and fluid extract digitalis were left to be given as directed. During the first twenty-four hours the cow remained about the same, except that there was no further trouble from the bloating. The pot. iod. solution was then repeated, and in about eight hours more the cow revived sufficiently to get up. The next day she remained up most of the time, but then lost control of herself, sank down and died.

No. VII.—This cow was found in the grass lot with her calf in the morning. At about four o'clock in the afternoon was found down and helpless. The injection was made, and caffein used as a stimulant. At about seven P. M., the owner called at my office and reported the cow as being able to hold up her head and seemed lots better. He returned half an hour later and found the cow dead.

No. VIII.—Was too far gone for any treatment to do any good, though it did live several hours after the treatment was administered.

In addition to the treatment used as above described, the cases were all carefully watched and kept propped up as well as possible. Injections given per rectum, etc.

The direction of Dr. Schmidt was followed as closely as possible, except that I used a syringe, pumping a continuous stream into the gland and then with the same instrument I forced in a quantity of air. I was at all times careful to have the instrument thoroughly aseptic, and in fact every precaution was used to prevent any septic poisoning.

I should like to know wherein my treatment was lacking, that I could not obtain the brilliant results reported by some of our brother practitioners. This is a most important subject, and I hope we may have a general report of the experience of the veterinary profession at large.

(Reprinted from the Country Gentleman.)

HEREDITARY DEFECTS OF DOMESTIC ANIMALS.

BY W. L. WILLIAMS, V. S., ITHACA, N. Y.

The principles of breeding are founded on the tendency of parents to transmit to their offspring their own characteristics, whether good or bad, so that in selecting breeding animals it is quite as essential to avoid the one as to attain the other. A very excellent animal in a general way may be made useless because of some defect which the careful breeder could avoid.

As we shall use the term "hereditary," it will signify the transmission of an essential, integral quality from parent to offspring, and will not include the transmission of such diseases as tuberculosis, which is sometimes transmitted from mother to young prior to birth, simply by the transmission of the germs of the disease from the mother to the young animal in the womb, in much the same way as contagion would occur after birth.

Domestication consists largely in the increased development of certain desirable qualities in an animal species, and the dwarfing or repressing of undesirable characteristics. While bringing about these changes through domestication, it is essential

that harmony be preserved, and that no variation be induced incompatible with the proper performance of all essential functions. Domestication is specialization. The wild animal is a general-purpose animal. When we destroy by specialization the essential harmony of the animal body, we induce a *defect* which may vary in character, but may be largely included under two heads: 1. Arrested development of a part; 2. Over-development of a part. Should one of these defects be present in an exalted degree, it is generally classed as a monstrosity, and usually tends either to compromise the life of the monster or prevent it from procreating its kind.

Among the various hereditary defects, arrest in the development of a part is probably the most common; and since in domestication the safety of the young animal from enemies and starvation is guaranteed to a high degree, the reproductive functions are in a measure repressed to avoid overproduction, a repression which is carried so far that arrested development of the reproductive organs is common and important. Notable among these is the arrested development of the testicles of the male.

Early in embryonic life the testicles are formed just behind the kidneys, from which position they usually descend shortly prior to birth, pass outside the abdomen and rest in the scrotum. Arrest this process and a cryptorchid or ridgling is produced, the testicles remaining within the belly. As we castrate more than 99 per cent. of male animals, and since these "ridglings" require the services of a specially skilled operator at a price several times as great as that required for the ordinary male, the defect assumes considerable economic importance. In the horse the hidden testicle renders the animal disagreeable, unsafe and vicious; in meat-producing animals the meat is unfit for food. The hidden testicle is impotent, so that while an animal with one hidden testicle and one normal testicle breeds readily, one with both testicles hidden is sterile and ceases to perpetuate his defect. Few defects are more strongly hereditary than the hidden testicle; it is transmitted with great fidelity by the male having one normal and one hidden testicle, and we have no doubt is also transmitted in a less degree by females begotten by defective sires.

There was recently presented at the New York State Veterinary College clinics for other reasons a lamb having one hidden testicle. Inquiry revealed that the owner had bought in 1897 a flock of ewes all apparently sound, and one ram supposed to be normal. In the spring of 1898 the ewes gave birth to a total of

28 lambs, 21 males and 7 females. Of the former 14 had one or both testicles retained within the abdomen and 7 were normal, while the breeding ram on investigation, proved to be a "ridgling." We advised the owner to dispose of the ram and his progeny, male and female, normal and abnormal, for slaughter, as the only effective means of stopping the appearance of "ridgling" lambs.

Hereditary influence in the production of hidden testicles has likewise been amply illustrated in ridgling boars offered for castration. They have rarely come singly, but generally two or more at one time from the same dam or sire, and only one case has been offered which showed any other cause for the abnormality than arrested development of the organ.

Of equal interest is the hereditary transmission of herniæ or ruptures in animals, these being of two kinds, navel or umbilical and scrotal or inguinal. In each case it is due to arrest in the development of the respective parts, by which process the openings are so closed or narrowed as not to permit the passage through them of intestines or other internal organs. It is a notable fact that the two forms are interchangeable and must therefore be very closely related. In one case I observed a sow with navel hernia, and her pigs, eight or ten in number, each had one or more herniæ, the sow pigs the umbilical or navel rupture, while the boars showed either or both navel and scrotal.

A client engaged in breeding pedigreed draft horses, and raising ten to twenty foals annually, had not had a hernia among his horses until buying an excellent stallion, apparently free from any such defect, while his first crop of foals showed about 50 per cent. of navel herniæ. The second crop was not so bad, but the herniæ still appeared, and the owner very properly disposed of the sire. Doubtless he had, as a foal, shown navel hernia, which with age, tends to disappear if not very large. But the taint remains, and the defect is transmitted, whether the hernia be cured or has recovered.

Recently we had offered at our clinics for castration two boar pigs with scrotal herniæ from one sow, and from the next brood three pigs affected in the same manner, a total of five defective pigs from one sow within about six months. We have also observed some pigs with tumors on their foreheads, with the history that on the farm five to ten per cent. of all pigs dropped for a number of years have shown these tumors. Some of them died after a few days with brain symptoms; others recovered, leaving no external marks. The female line was constant, while the male

line was frequently changed. The defect was apparently due to an arrest in the development of the skull, leaving a portion of the brain uncovered and protruding; and while none of the sows bred showed any signs of the defect at the time of breeding, and may not even have done so when first born, they yet transmitted to their offspring, generation after generation, a defect which compromised the lives of a considerable number. The observation teaches that close relationship to defective animals, even if a parent has been always free from the defect, tends strongly to its perpetuation in the particular strain or family.

The over-development of a part is less common as a hereditary defect, possibly partly because over-development tends more strongly to compromise the life of the individual. One of the most common of this class of defects is excessive size of the head and neck. This is observed in various domestic animals. I recall a bull with a very heavy head and neck whose progeny inheriting his form, generally caused serious trouble at time of birth, the cows requiring assistance in many cases, thus compromising the lives of the young and mothers alike.

Instances could be multiplied, but all teach the same lesson—that defects are transmitted with as great fidelity as good qualities, and that the cure of or recovery from an essential defect does not prevent or even lessen the tendency to transmit and perpetuate the defect in the offspring generation after generation. It even teaches us that sound parents springing from a defective family tend to perpetuate in their offspring family weakness. A sow the offspring of a boar having scrotal hernia is unsound for breeding purposes, though the sex prevents her unsoundness as an individual. A careful study of antecedents of pedigree, should be made of every breeding animal and defects guarded against with as great diligence as good qualities are sought. A complete pedigree should show as far as possible every defect of ancestors as well as color or trotting speed, milk or butter record, and should have proper weight in fixing the value of a breeding animal.

VETERINARIANS OF NEW YORK: Do not thoughtlessly fall into the trap prepared for you by the Veterinary Service Association.

It is said that the only auto-truck in operation in New York has a capacity of three tons, and its machinery weighs eight tons. Evidently there will have to be a reversal of weights before it can hope to be popular.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

A NOVEL METHOD OF RETAINING AN EVERTED UTERUS.

By J. A. McCrANK, D. V. S., Plattsburg, N. Y.

What appears to me to be a novel treatment for eversion of the uterus came to my attention lately; since then I am at a loss what to do about the matter, if I should do anything.

On June 18th of this year, a lady called at my office, asking me to go out about ten miles in the mountains to see a cow, which had been ailing for some time, and no one could understand her trouble. All the smart men in the district had visited her, and treated her, but all to no purpose. I went out, and found a cow standing in a meadow close to the house, where she could be watched and fed. She was very much emaciated; her eyes were sunken; she had not chewed her cud for some time; her back was arched, and there was a purulent discharge from her vulva, and she laid a great part of the time.

History.—The cow belonged to a widow lady and her maiden daughter, sole inhabitants of the homestead, and I being a blooming, bashful, blushing bachelor, 'twas no easy task to get a history of the case; but, after many vain efforts, I found out that the cow had dropped a calf about five weeks previous, and a few hours afterward she everted the uterus. Mr. G., a charlatan in the district, whose ignorance far overbalances his good or moral senses, was called. He replaced the uterus, but the cow has been ailing ever since. Now, I was worse off than ever. Could he have punctured the uterus? Did he injure the uterus? and would an injury cause such debility? I was now at bay. I drove the cow to the barn, and passed my hand into the rectum, when I felt a hard irregularly shaped lump on or about the neck of the uterus. Next I passed my hand per vagina, and felt the same, but on manipulating to find what I had it dropped out of reach. Passed hand per rectum again, and felt the body deep in the abdominal cavity. My conclusion was that it was a tumor on the left horn of the uterus due to an injury.

At this moment a neighbor came to the barn, and I told him what I had found. He woke up to the cause of the trouble only now, for he helped to return the uterus. He said: "Mr. G. returned the uterus, and placed a stone in the cavity to prevent

its expulsion again, and he (Mr. G.) said she would throw it out in a few days, and it is the stone you feel there."

Treatment.—I washed the parts all about the vulva, and I sponged out the vagina with a solution of creolin, for such was all I had with me. I now passed the knife into the vagina, made an incision on its superior wall and soon had my hand in the uterus, where I found the stone, 2 pounds 11 ounces in weight, tightly wedged into the left horn of the uterus. I removed it and washed out the cavity with creolin, took two stitches in the wall of the vagina, and gave orders for subsequent treatment.

Result.—The cow was in heat last week, but I forbade her to be served for six weeks to come; she is repairing very quickly; her flow of milk has returned and all hands, except Mr. G., are happy.

IS THE MEDIASTINUM ALWAYS PERFORATE?

By W. LINCOLN BELL, D. V. S., Brooklyn, N. Y.

A bay mare, six years old, suffered from pleuro-pneumonia, which after ten days became complicated by effusion into the thoracic cavity. Paracentesis thoracis was performed upon the right side between the sixth and seventh ribs, an ordinary sterilized trocar and canula being employed, and eight gallons were removed. The patient became much better after this, and gave promise of an uncomplicated recovery for one week, when the temperature rose and the respirations became labored, with marked bronchial râles in the left lung. Thinking that the effusion had reformed, the right cavity was again entered, but with negative results, although it was thoroughly searched at various depths of insertions of the canula. Not satisfied, the trocar was plunged in at the very bottom of the cavity, but without obtaining any fluid. The opinion was then advanced that the mare was affected with chronic interstitial pneumonia of the left lung, and an unfavorable prognosis given. After four days the respirations became so labored, and the physical symptoms on the left side so characteristic of hydrothorax that it was decided to aspirate that side, notwithstanding the popular acceptance of the assertion that when an effusion occurs on one side it must of necessity flow into the opposite cavity through the natural openings in the mediastinum. The result of the tapping of the left cavity was seventeen quarts and an immediate improvement in the condition of the patient, which now gives promise of ultimate recovery.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By PROF. OLOF SCHWARZKOPF, Flushing, N. Y.

• HEROINUM MURIATICUM.—Dr. A. Eulenburg reports experiments with the subcutaneous injection of heroinum muriaticum (300 injections) in the treatment of diseases of the bronchii accompanied by painful cough and dyspnœa and in emphysema. This new salt is readily soluble in water, which should be sterilized. The dose is the same as that of morphine. The therapeutic action consists in lessening the irritating cough, and in antiasthmatic and antidyspnœic effects. The results of injection were invariably uniform and no bad after effects were recorded, although it is a strong poison. E. concludes that heroinum muriaticum constitutes a valuable addition to our modern remedies, applicable only by the skilled physician and veterinarian.

BREWERY YEAST IN TREATMENT OF CATARRHS.—A rather curious, certainly a new method of treatment of catarrhs, especially of the vagina, has been announced by Dr. Landau of Berlin. He uses brewery yeast, kept on ice and renewed every three days. The yeast is mixed with beer or other fermentable fluid and the solution introduced with a syringe. The dose is from 16–20 c.c., renewed from two the three days. With the yeast treatment L. succeeded in suppressing all macroscopic signs of discharge, and the recovery has been lasting in the majority of cases. L. explains the anti-catarrhal effect of the yeast as follows: (1) direct mechanical suppression of the micro-organism of catarrh by proliferation of the yeast fungus; (2) dehydration of the affected membranes and withdrawing of nutrient material necessary for the life of the germs; (3) neutralization of the toxins of the micro-organism of catarrh by metabolism.

ITALIAN REVIEW.

FISTULA OF THE METACARPO-PHALANGEAL SYNOVIAL BURSA [*By Garibaldo Lisi*].—A mare, used for light draught, was brought to the author to be fired for enlargement of the fore

legs at the pasterns and with some ossified enlargements near the suspensory ligament. The operation was done with deep fine needles, and the animal properly secured to prevent her from biting. The second night, however, the mare got loose, and tore the skin of the right leg from the knee down to the coronary band, on the outside of the leg. The case was very serious, but by careful dressing of sublimate solution with iodoform gauze and a slightly compressive bandage, she began to improve steadily, when on the seventh day the owner took her out, the result of which was that the dressing got loose, and a fistulous tract, oozing synovia, was formed. Careful treatment gave some improvement, but the synovial discharge kept up and became suppurative, when more severe treatment was decided upon. The mare was thrown and secured, and the fistula freely opened upwards and downwards. The external sesamoid was found partly bare of periosteum, and also the lower part of the principal and external rudimentary metacarpal bones. The superior extremity of the os suffraginis was healthy. The sesamoid and uncovered portion of the metacarpal were scraped, and the cavity thoroughly disinfected with sublimate solution, then filled with aseptic iodoform and the leg wrapped with aseptic wadding. The dressing was renewed every three or four days, until the wound began to look better, when the treatment consisted only in injections of tincture of iodine. After fifty days the mare was cured and after seven months is doing her work well. All that remains of the trouble is a certain stiffness of the fetlock. There is but little blemish left, except a very small swelling on the joint.—(*Clinica Veterin.*)

RETENTION OF THE PLACENTA IN A COW—EXTRACTION PER RECTUM [*By Romolo Morselli*].—The author noticed, in a five-year-old cow, a few days after parturition, which seemed to have been normal, and according to the owner had been well delivered, the ordinary symptoms of acute metritis. Vaginal exploration showed the os closed, scarcely allowing the entrance of the finger; the temperature was 40.5°C ., the general aspect sickly, milk secretion stopped. There was a slight vaginal discharge. As the cow had had prolapsus of the uterus before, and as the owner had often reduced it himself, the veterinarian thought that perhaps similar manipulations had been resorted to and some traumatism produced. Cold compresses were applied to the loins, and a few doses of salicine and camphor in wine and tonics prescribed, with washings of the uterus with boric water. Little by little the animal improved, and yet the uterine dis-

charge continued abundant and with bad odor. To stimulate the contractions of the uterus tepid water was injected. A few days after (fifteen days after parturition) the cow rejected a certain mass of the placenta, much to the surprise of the owner. That was not all; a few days later the cow grew worse; by vaginal and rectal exploration the author discovered that the uterus was as big as a man's head, which could be explained by an incomplete delivery and a collection in the uterus. After 24 days from parturition another rectal examination revealed an opening of the inferior wall of the rectum, about 15 centimeters from the anus, which went into the uterus and through which 650 grammes of placenta were extracted. The cow recovered entirely.—(*Giourn. de Acad. Vet. Ital.*)

GEMELLAR GESTATION.—DYSTOKIA IN A COW [*By G. Guidotti*].—Two anterior extremities and a head in good presentation and position, already through the vulva, seem to belong to the same foetus. Six strong men are uselessly pulling on it. By exploration the author discovers two foetuses placed one on top of the other, both in the anterior presentation—an exception to the rule. The one whose feet are protruding through the vulva is in the dorso-sacral position, with the head bent downwards between the fore legs; the other, whose head is visible, is riding the other and has both fore legs kept back. Both foetuses are in the same amniotic sac. After much effort, the legs of the first foetus are pushed back, those of the second are brought into position and the foetus removed. The other was extracted readily afterwards. Both were dead. The cow recovered without difficulty. *In a Mare* [*By Michele Barbara*].—This case was in a mare. By vaginal exploration a foetus was discovered in the anterior presentation and vertebro-pubic position, with the anterior and posterior extremities flexed, and the head bent down on the knees. With some difficulty this foetus was, however, well delivered. But after a short time the mare began to show new pains, and soon another amniotic sac appeared through the vagina with a small foot protruding. After a second examination the other was also removed. This one was also an anterior presentation, in the left vertebro-iliac position, with the neck bent in such a manner that the head twisted upwards, and had the inferior jaw resting against the roof of the maternal pelvis. Both foetuses were well developed, well formed, and the mare recovered without any trouble.—(*Clinica Veterin.*)

A CASE OF RABIES—*STRONGYLUS GIGAS* IN THE ABDO-

MEN [*By Mr. A. Roudellii*].—A five-year-old pointer, ordinarily good humored, but sometimes capricious, at one time when in heat showed peculiar symptoms: loss of appetite, irritability, refusing sexual intercourse, although plainly in heat. He looked suspicious of rabies; a few days later the symptoms were more marked, he bit a dog and a person, and finally died paralyzed. At the post-mortem the veterinarian who made the diagnosis of rabies found it confirmed, but besides a *strongylus gigas* in the abdominal cavity, which had the serous membrane much inflamed. Mr. Tricerri hesitates as to the correctness of his diagnosis. However, the person who was bitten was placed under treatment, and the brain of the dog sent to Dr. Roudellii to inoculate two rabbits. Sixteen days later both died with rabies; inoculation in series as far as the third generation confirmed the diagnosis. The conclusion is that in pseudo-rabies one must not be too hasty in making a diagnosis for fear of serious sequelæ.—(*Giourn. de Acad. Vet. Ital.*)

VERMICULAR PHTHISIS OF CALVES [*By E. Perroncito*].—The author mentions a number of experiments that he has made on the duration of life of the strongyli with various liquids, administered by intratracheal injections: In sulphuric or muriatic acids, 1 per cent., it lasted 4 to 5 minutes; in phenic acid, 1 per cent., 5 minutes; in creosote, 1 per cent., 7 to 8 minutes; in saturated solutions of thymol, 6 to 8 minutes; in aqueous solutions of salicylic acid, 17 minutes; in formaline, 1 or 2 per cent., 5 to 6 minutes; in a liquid composed of 5 parts thymol, 5 of chloroform, 45 of glycerine, 5 minutes. Dr. Cattania, who treated animals with those preparations, considered the injections of phenic acid by far the best.—(*Giourn. Veter. Soc. di Torino.*)

DURATION OF GESTATION IN THE SOW [*By S. Baldassire*].—The following interesting records are published from observations made by the author in sows: In Yorkshire breeds.—1 gestation of 99 days, 4 of 112, 6 of 113, 6 of 114, 10 of 115, 11 of 116, 5 of 117, 4 of 118, 2 of 119, 2 of 120, 1 of 128, 1 of 129, 1 of 136. In Casertana breeds.—3 gestations of 106 days, 3 of 107, 2 of 110, 4 of 111, 2 of 113, 2 of 115, 2 of 116, 1 of 122. In crossing these breeds the averages have been 113, 114, 110, 109 and 111.

THE STATE MEDICAL SOCIETY OF NEW JERSEY offers the "Fellows Prize" of \$100 for the best essay on "Hydrophobia" presented by a member at their next meeting.

CORRESPONDENCE.

QUESTIONS FOR STATISTICS ON SCHMIDT'S TREATMENT OF PARTURIENT PARESIS.

Editors American Veterinary Review :

DEAR SIRS:—Having been urged by Secretary Dr. Stewart, A. V. M. A., Prof. Roscoe R. Bell and others to bring the subject of Schmidt's treatment of milk-fever before the National Association for discussion, I feel it my duty to comply with their wishes, although I have little new to offer at the present time. However, these colleagues have suggested to me to collect American statistics of the treatment, and I have propounded below a schedule of questions which will secure us ample material for discussion. None of our colleagues who have tried this new treatment need be ashamed to send in reports of unsuccessful attempts or adverse results, for our aim should be to discover the disadvantages of this treatment as well as its advantages. The questions may be answered by referring to the numbers only :

1. Breed of cow.
 2. At what time after delivery taken ill?
 3. At what time treatment inaugurated?
 4. How much iodide of potass. injected?
 5. At what time occurred recovery, complications or death?
 6. What complications or bad after-effects were conspicuous?
- Please send replies *at once* to

OLOF SCHWARZKOPF,
Flushing, New York City.

REMARKS ON SCHMIDT'S THEORY AND TREATMENT OF PARTURIENT PARESIS.

COLUMBIA, TENN., July 20, 1899.

Editors American Veterinary Review :

DEAR SIRS:—In the hands of the majority of veterinarians, according to their reports, the iodide of potash treatment in parturient paresis has given splendid results. While my results have not been entirely satisfactory, I still have faith in believing that almost a specific has been found for this troublesome disease. Some of my patients have had unfortunately other complications associated with parturient paresis, but I will give a brief summary of both the good and bad, for it is only by so doing that correct comparisons can be made. They were all

treated in the minutest detail in the manner given by Schmidt. The ones that presented complications had, of course, to receive extra attention.

No. 1. Parturient paresis, with inversion of the womb—death.

No. 2. Parturient paresis—death.

No. 3. Parturient paresis, inversion of the womb, half udder gangrenous—death.

No. 4. Parturient paresis—death.

No. 5. Parturient paresis—recovery.

No. 6. Parturient paresis—death.

No. 7. Parturient paresis—recovery.

In the two cases recorded as recovering, the results seemed to be astonishingly good, as both patients regained their feet in seven and eight hours respectively. The question which I have from the first asked myself is, why do we administer this iodine solution by the way of the lactiferous ducts? It does, indeed, seem a somewhat laborious way of administration. Does it not have to enter the circulation before it can act? and would it not be far more quickly absorbed if given in the ordinary manner? It is of course unquestioned that the milk secretion can be checked by the internal administration of iodide of potash. Is it not a fact that hours after the introduction of this solution by way of the mammary gland there is still quantities of it left there? Of course, to the majority of our clients this seems to be the most direct method of doing good, for its name (milk fever) would suggest to them local medication, but to a medical doctor, should we have occasion to treat a case of this disease for him, what answer should we make if he asked the question, why not give your solution by the ordinary channels? has it not to enter the circulation?

As to the cause of parturient paresis, Schmidt's theory, I believe, of the origin of this disease is in an abnormal secretion of colostrum. If this be so, how then can we account for cases occurring anywhere from two to eight weeks or even twice that length of time after parturition? Surely no one would suggest that the mammary glands contain colostrum at so late a date. I have had in my practice cases from two to five weeks after calving, and, is it possible, nearly six months after? I will leave you to judge. A short time ago I was called early one morning to see a cow, a registered tested Jersey, that presented all the symptoms of parturient paresis. She was lying resting on her sternum with head turned around towards the flank. She

ground her teeth at intervals, and the coma became more and more marked. Soon the eyes became fixed, dull, and lustreless; the temperature 37° C., respiration stertorous, fæces in the rectum small, very hard, and dark. On inquiry, I was told that she had had a calf five and a-half months previous. I, therefore, concluded that in all probability I had some trouble of the alimentary canal to deal with, and I administered a powder of aloin four and one-half drachms, gave clysters, and catheterized the bladder. Before leaving she became tympanitic, and I tapped her, and left my trocar and canula with the owner, with instructions how to use it. I also showed him how to prop the cow in case she got over on her side. That night I found no change in my patient; I had a powder of pot. iod., 3 iij, in my case, and thought I would try it, so I dissolved it in about half a pint of water and gave it per orem. Her breathing was then very labored, her look blank, and no reaction on touching the eyeball. Seven hours after receiving the solution she arose. Whether this was a case of parturient paresis or not I cannot say; I only know, after having had a good deal of experience in the treatment of cattle, I was unable to distinguish between this disease and the many cases of milk fever that I have met with.

In conclusion I wish it to be understood that I in no way wish to depreciate the work that Mr. Schmidt has done to clear up the mysteries hanging around this disease, but that I want to have more light thrown on these two points that I have brought before you, namely: as to why we administer the iodide of potash by way of the mammary glands, and can this disease have its origin in an abnormal secretion of colostrum when we can meet with this disease so long after colostrum has formed in the mammary glands. P. D. BRAY, *Veterinarian*.

MORE EXPERIENCE WITH COCAINE.

EVANSVILLE., IND., July 15, 1899.

Editors American Veterinary Review:

DEAR SIRs:—On page 296, July REVIEW, in your reply to Dr. Abbott you suggest hearing from other practitioners in regard to the action of cocaine.

I have experienced the same results in several cases. One in particular being a mule, and in another a trotting gelding, it seemed to produce great excitement and hyperæsthesia over the field of injection. I, however, use only a 4 per cent. solution and find just as satisfactory results in locating lameness or for firing, nerving, etc., as with the stronger solution.

Very truly yours, J. R. MITCHELL.

VETERINARY SCIENCE IN JAPAN.*

This profession can be followed only by one who has obtained a license from the Minister of State for Agriculture and Commerce.

Those enumerated below may obtain the license :

One who has passed a veterinary examination and holds a certificate ; one who holds a diploma of a governmental veterinary school or a certificate that he has passed a special course of the veterinary department of the agricultural college ; one who holds a certificate that he has passed a special course of the veterinary department in a public or private school, the curriculum of which has had the approval of the Minister of State for Agriculture and Commerce ; one who holds a graduate certificate of a governmental or public veterinary school in a foreign country.

A license fee of 1 yen (49 cents) must be paid ; a renewal of license on account of loss can be made upon the payment of 50 sen (24 cents).

A suspension of business for not less than five days and not more than fifty days, or entire prohibition of occupation, may be adjudged, if there be any offense with regard to veterinary practice or improper conduct, by the Minister of State for Agriculture and Commerce, according to the circumstances of the case. This prohibition may be rescinded after three years have elapsed, if deemed advisable, in which case the practitioner must apply for a fresh license.

A fine of not less than 5 yen (\$2.49) nor more than 50 yen (\$24.90) will be imposed upon one who has practiced veterinary medicine or surgery without obtaining a license. A fine of not less than 2 yen (99 cents) nor more than 25 yen (\$12.25) will be imposed upon one who follows the business while he is under suspension.

A penalty of not less than one yen nor more than 1.95 yen will be imposed upon a veterinary surgeon who shall have refused to comply with the request of others for professional services, without proper reasons therefor.

The Minister of State may issue a provisional license to a person who has none of the qualifications enumerated above, but whose antecedents merit such favor, by limiting the area of operation and the period of practice, upon the recommendation of a governor of a prefecture where veterinary surgeons are scarce.

* Extracted from U. S. Consular Reports by W. J. Martin, M.D.C.; Kankakee, Ill.

OBITUARY.

M. J. TREACY, M. R. C. V. S., Eighth U. S. Cavalry, died of yellow fever in Puerto Principe, Cuba, on July 14. Dr. Treacy had been in the English army service in India, and came to this country about twenty years ago. He practised for a time in the West and also occupied the chair of veterinary medicine at the University of Minnesota, but later joined the U. S. army. He has been one of the staunchest advocates of veterinary reform in the army, and fifteen years ago published a leaflet entitled "The Defects in the U. S. Army Veterinary Service," which, without his name, has been used for many years in Congress as a forcible argument for veterinary legislation. He also spent considerable amounts of money for the same cause. It is reported that Dr. Treacy had just passed the examination prescribed by the Army Reorganization Bill, and it is a cruel fate that has kept him from finally enjoying the fruits of his unceasing labors. He should be remembered by the American veterinary profession as one who has enthusiastically and steadfastly worked for the betterment of a branch of our profession.

O. S.

ISAIAH MICHENER, V. S., died in the early part of June at his home in Carversville, Pa., aged about eighty years, sixty of which had been devoted to the practice of veterinary medicine. Beginning in the early part of the present century, many years before the establishment of veterinary schools in this country, he did not have the advantage of a college training, but it has been said of him that through hard study and close observation he had acquired a fund of veterinary knowledge based upon the most scientific lines. He was a teacher in the earliest schools established on this Continent at Philadelphia, and was a charter member of the United States Veterinary Medical Association, and labored assiduously for its success, as well as for that of his profession in every branch, and to his influence and example much is due for its present high position. Besides giving his own life to its cause, he contributed two bright sons, the late Dr. Charles B. Michener, and Dr. J. Curtis Michener, of Colmar, Pa., besides another son engaged in the practice of human medicine.

A. E. CONROW, V. M. D., M. D.—At Philadelphia, in June, this well-known veterinarian succumbed to the effects of an operation for appendicitis, following but eight weeks the death of his wife, and leaving six small children. He was born in

New Jersey, and took his veterinary degree at the University of Pennsylvania, in 1892, subsequently graduating in human medicine. He accumulated a large practice and was active in politics.

ERNEST CARY-ELWES, V. S., Ontario, '98, who had been practicing at Jacksonville, since shortly after graduation, died at the residence of his father, Col. D. G. Cary-Elwes, in Conway, of heart disease, aged twenty-four years.

SOCIETY MEETINGS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

Place and Date of Next Meeting: New York City, September 5, 6, and 7, 1899.

Convention Hall: Large Assembly Room of the Academy of Medicine, 17 West Forty-third Street, near Fifth Avenue.

Headquarters: Hotel Manhattan, corner Forty-second Street and Madison Avenue.

Local Committee of Arrangements: Drs. H. D. Gill (chairman), Roscoe R. Bell, George H. Berns, E. B. Ackerman, and W. H. Pendry.

Location of Surgical Clinic: American Horse Exchange, Fiftieth Street and Broadway.

Pathological Exhibit: Eastman's Abattoir, Fifty-ninth Street and Eleventh Avenue.

Officers of the Association: President, Dr. A. W. Clement, Maryland; Eastern Vice-President, Dr. Leonard Pearson, Pennsylvania; Middle Western Vice-President, Dr. A. H. Baker, Illinois; Western Vice-President, Dr. S. B. Nelson, Washington; Secretary, Dr. S. Stewart, Kansas; Treasurer, Dr. Wm. Herbert Lowe, New Jersey.

STANDING COMMITTEES FOR 1898-99.

Executive.—C. A. Cary, Alabama (chairman); J. F. Winchester, Massachusetts; W. H. Hoskins, Pennsylvania; Roscoe R. Bell, New York; M. H. Reynolds, Minnesota; A. T. Peters, Nebraska; D. E. Salmon, District of Columbia. *Ex-officio*—A. W. Clement, Leonard Pearson, A. H. Baker, S. B. Nelson, S. Stewart and W. H. Lowe.

Army.—D. E. Salmon, District of Columbia (chairman); F. H. Mackie, Maryland; W. H. Hoskins, Pennsylvania; J. P. Turner, District of Columbia; M. Stalker, Iowa.

Publication.—W. L. Williams, New York (chairman); Roscoe R. Bell, New York; W. Herbert Lowe, New Jersey; R. P. Lyman, and S. Stewart (*ex-officio*).

Finance.—C. C. Lyford, Minnesota (chairman); John R. Mitchell, Indiana; Lemuel Pope, Jr., New Hampshire.

Resolutions.—Leonard Pearson, Pennsylvania (chairman); James Law, New York; T. E. White, Missouri; J. C. Norton, Arizona; L. A. Merillat, Illinois.

Diseases.—C. W. Heitzman, Louisiana (chairman); Tait S. Butler, Mississippi; H. D. Gill, New York; J. M. Parker, Massachusetts; H. P. Eves, Pennsylvania.

Intelligence and Education.—M. Stalker, Iowa (chairman); James Law, New York; F. H. Osgood, Massachusetts; Joseph Hughes, Illinois.

PATHOLOGICAL EXHIBIT.

The REVIEW very much regrets the announcement in the July issue to the effect that owing to the difficulty in securing sufficient material the exhibit for this year had been abandoned. The local committee decided in accordance with this announcement, but unfortunately they were not in close touch with the Secretary, who has been pursuing the collection of specimens in all the great western live stock centres for some months, and who assures the committee that it has proceeded so far as to surpass by long odds the very creditable display at Omaha. The inspectors for the Bureau of Animal Industry at Omaha, Kansas City, St. Louis and Chicago will have a great mass of specimens illustrating almost every diseased condition usually met in the abattoirs, and they will be shipped to New York free of cost to the association, or at least, at very little expense. In view, therefore, of the discussion upon Meat Inspection the exhibit will be very helpful and lend additional interest to this important subject.

LITERARY PROGRAMME.

Besides the important discussion upon sanitary subjects (including "Municipal Meat Inspection," "Dairy Inspection," "Disinfection" and the "Suppression of Tuberculosis,") which were detailed in the July REVIEW, there were given in that issue the titles and authors of twenty-four papers to be read, a repetition of which is here deemed unnecessary. Since then the Secretary informs us of the following additional papers:

Dr. James B. Paige, of Massachusetts, "European Veterinary Institutions."

Dr. J. M. Parker, of Massachusetts, "Notes on Rabies."

Dr. E. M. Ranck, of Pennsylvania, "Tetanus Antitoxine."

Dr. N. S. Mayo, of Connecticut, "The Veterinarian of the Future."

Dr. Hermann Wellner, of New York, "Rheumatism in Domestic Animals."

With these five papers the programme will contain, in addition to the sanitary discussion, twenty-nine papers, and it is much more than likely that others will be received. This exceeds by far any former record, and the association will be compelled to enforce the twenty-minute rule, and otherwise expedite matters to get through with such a mass of material.

THE PROGRAMME OF ENTERTAINMENT

was fully outlined in the July number, and nothing has transpired to change the details there given, either in that for the members, or for the ladies.

Veterinarians coming from a distance will bear in mind that the railroads have granted the usual reduction in fare—that is, full fare to the convention city, and one-third rates on the return fare.

NOTES.

Drs. Joseph Plaskett, H. D. Fenimore and W. N. D. Bird, of Tennessee, have planned to enjoy the Congress of Veterinarians in the great metropolis.

The following States west of the Alleghenies and south of the Potomac will certainly be represented at this year's meeting: Virginia, North Carolina, South Carolina, Tennessee, Kentucky, Alabama, Louisiana, Arkansas, Missouri, Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Nebraska, Kansas, Colorado and Washington, and it is confidently expected that several other States as well as the Dominion of Canada will be duly represented.

Dr. Benjamin McInnes, of Charleston, and Dr. Nesom, of Clemson College, South Carolina, have expressed their intention to participate in what will undoubtedly be the greatest meeting the association has ever held.

Kansas City will be represented at the New York meeting by Dr. John S. Buckley, Dr. Robert C. Moore and Dr. S. Stewart.

Nebraska will show her appreciation of the association's visit to that State last year by sending a large delegation to New York. The following members expect to attend the meeting: Dr. Don C. Ayer, of South Omaha; Dr. A. T. Peters, of Lincoln; Dr. J. S. Anderson, of Seward; Dr. V. Schaefer, of Tekamah, and Dr. H. L. Ramacciotti, of Omaha.

Dr. S. K. Spaulding, Health Commissioner of Omaha, expects to attend the meeting, as he is very much interested in the sanitary subjects to come before the association.

Dr. J. M. Wright, of Chicago, will join in the pilgrimage to New York City.

Dr. J. C. Meyer, of Cincinnati, will probably present the claims of that city for the meeting in 1900.

Cleveland, Columbus, and Detroit will doubtless be candidates for the meeting in 1900.

Where in our great country does the veterinarian live who is not greatly interested in the subject of "Disinfection," and who would not sacrifice a day's business to hear Dr. Grange's paper on that topic, with the discussion which it is certain to elicit?

He who fails to see the display of pathological specimens found in food animals which will be made in conjunction with the discussion on Municipal Meat Inspection, will miss an opportunity he is not likely to have again. The specimens will be shown in the fresh state, just as they appear on the slaughter-bed, and are being collected in a number of widely separated localities, hence will include a greater variety than will likely be gathered again, unless the Federal Government should undertake such a collection. Many veterinarians will be contributors to the collection, and to any person really interested in food inspection it will be worth the cost of the journey to New York to have the privilege to see and to study this collection.

The numerous papers to be presented during the meeting which relate to general veterinary practice and the several hours to be devoted to clinical demonstration of numerous important operations, also some of the more recently devised operations, must certainly convince the general practitioner that the meeting for 1899 was planned for his special benefit and that he cannot afford to stay away.

If the veterinarians in the area surrounding New York City attend this meeting in proportion to the attendance at Omaha last year from Nebraska and Iowa, the Secretary's roll will not hold all the names.

MISSOURI VALLEY VETERINARY MEDICAL ASSOCIATION.

The annual meeting was held at the Y. M. C. A. Building, in the city of St. Joseph, Missouri, June 26th, 1899.

The meeting was convened at eight o'clock P. M., with Dr. S. E. Bennett, President, in the chair. Dr. Kelly, in the absence of Dr. W. A. Heck, Secretary of the association, acted as Secretary of the meeting. Those in attendance were Drs. Ben-

nett, Stewart, and Moore, Kansas City; W. N. Hobbs, Holton, Kan.; Forbes, Kelly, Washburn, Wright and Netherton, of St. Joseph. Visitors and others present: Drs. James Wilson, J. E. Blackwell, Thomas H. Ripley, Joseph Good, H. C. Patterson, John A. Sloan, Joseph Thackaberry, St. Joseph; Dr. A. T. Peters, of Lincoln, Neb.; Dr. V. A. Schaefer, of Tekamah, Neb.; L. C. Brown, of Hamilton, Mo.; M. Y. Schaefer, of Mount Ayr, Iowa; Dr. G. R. Conrad, of Sabetha, Kan., and Dr. Hansen.

The Board of Censors reported the following applications for membership: G. R. Conrad, L. D. Brown, H. G. Patterson, V. A. Schaeffer, M. Y. Schaeffer, John A. Sloan and Joseph Thackaberry. Said applicants were found to be eligible to membership, and satisfactory to the association.

It was then moved by Dr. Forbes that the rules of the association be suspended and that the Secretary be instructed to cast the vote of the association for the above named gentlemen, which was duly seconded, and carried.

Next in order was the reading of the report of the Secretary. It was moved and seconded that the report of the Secretary be received as read and placed on file. Motion carried.

The Secretary then read the resignations of Drs. W. A. Heck, W. P. Steddum and W. P. McCurdy. It was moved by Dr. Forbes that the resignations be accepted, and in the case of Dr. Heck he suggested that as he had proven an efficient member and able officer of the association while acting in the capacity of Secretary, it would be a grateful act on the part of the association to elect him an honorary member.

ELECTION OF OFFICERS.

The next business was the election of officers—nominations first in order for the office of President.

Dr. Forbes: Seeing that the association has been so flourishing during the past year under the present executive, I think another term desirable, and I propose the name of Dr. Bennett for re-election for another year.

Dr. Bennett: I appreciate the courtesy, gentlemen, of re-electing me as President for another term, but I do not think the flourishing condition is due in any manner to my efforts, but to those of the Secretary. What we want is a hustling Secretary, and I think I can do more for the association as a private member and not as President, and I prefer not to serve another year.

Dr. Stewart: I propose the name of Dr. Forbes, who has been an active member of the association.

Dr. Forbes: It is probable that some of the other offices will be filled from St. Joseph, and I think it would be advisable to divide the offices between the other places on the river, and would withdraw my name.

Balloting upon the nominations of Drs. Bennett and Forbes was now in order. The President thereupon appointed Drs. Stewart and Washburn tellers to receive and count the ballots cast. A ballot being taken, the tellers announced that ten votes had been cast for Dr. Forbes, and five votes for Dr. Bennett.

Dr. Bennett: According to the ballots cast by the association Dr. Forbes has been duly elected President of the association for the ensuing year.

Dr. Moore presented next the name of Dr. Bennett for First Vice-President. There being but one nominee, the rules were suspended and the Secretary instructed to cast the ballot of the association, and Dr. Bennett was unanimously elected First Vice-President.

Dr. Stewart presented the name of Dr. V. A. Schaeffer for the office of Second Vice-President, and there being but one nomination, the rules were suspended and the Secretary instructed to cast the ballot of the association.

Dr. Forbes presented the name of Dr. James S. Kelly for the office of Secretary and Treasurer. It was moved and seconded that the President cast the ballot of the association for Dr. Kelly as Secretary and Treasurer for the ensuing year. The motion prevailed and Dr. Kelly was elected.

Drs. Washburn, Netherton, Bennett, Moore and Stewart were elected as the Board of Censors for the coming year.

Dr. Bennett then vacated the chair and said: "I thank the association for the courtesy extended to me during the past year, and I hope the members will take as much interest in the association during the coming year as they have in the past. I now turn the office over to Dr. Forbes."

Dr. Forbes on assuming the presidency said: "As the association has insisted, I will assume the duties of President, and I hope I will be able to conduct the affairs of the association in the same efficient manner that they have been conducted during the past year. I crave the indulgence of the members and hope that any fault that may occur will be overlooked."

The next order of business being the reading and discussion of papers, Dr. R. C. Moore, of Kansas City, Mo., read the following essay:

"GANGRENOUS GREASE OR DERMATITIS GANGRENOSA."

So far as I have learned Dollar's translation of "Möller's Surgery" contains the only mention of this serious and at times quite common malady.

It is characterized by moist gangrene of the skin and adjacent tissues of the phalanges of solipeds which produces extensive sloughing, and is supposed by some to be due to cold, but this idea is certainly incorrect. I have met with several cases and not a single one in cold weather. On the contrary, it has developed during quite warm weather and in at least one instance dry weather. So cold cannot be the sole cause. Infection through slight wounds is doubtless an important factor in the causation.

We might suspect obstruction to the circulation, but were that the cause the necrosis would be confined to the part that was robbed of nutrition and the dead tissue would be separate from the living, and no further invasion would occur, but in this affection new areas are rapidly invaded until the entire foot is destroyed or the animal dies from septic intoxication.

It is evident that much is to be learned of its etiology. It is sudden in its attack, often manifesting itself in a night, though its true character may remain obscure for one or two days.

The leg involved is swollen and extremely painful and resembles an acute attack of scratches. In the latter the soreness and swelling subside with exercise, while in the former it does not but is aggravated and the debility of the patient is more marked. After a few hours a careful examination will reveal a moisture of the skin in the affected part, and by gentle pressure a red turbid serum can be squeezed out that has the characteristic odor of gangrene, the surface of the necrotic spots will be cold and clammy while surrounding parts may have a supernormal temperature. The necrotic patches are usually small, but may involve larger areas. If located about the posterior part of the fetlock it may extend across the region as a crack like scratches, or it may extend up and down on either side of the flexor tendon from the coronet to fetlock, or upward from the fetlock, involving the entire distal metacarpal region. The swelling may extend to the hock or knee, or even higher, the animal becomes restless, showing extreme pain. The temperature is elevated, the pulse accelerated, small and weak, and debility soon becomes well marked. In two or three days the necrotic patches are cast off as slimy masses. The disease may terminate here and the wound fill

with granulations and recovery by cicatrization be complete in two weeks, but this termination is the exception rather than the rule, for in most cases new cutaneous areas and the deeper structures as well are invaded, sloughing extends to blood vessels, causing serious hemorrhage, tendons and ligaments are destroyed, even the capsular ligament, resulting in open joint; or it may extend behind the lateral cartilage, resulting in cartilaginous quittor. It is not often that these conditions are found excepting the destruction of the blood vessels, as in most instances the system ere this absorbs a sufficient amount of poison to produce a general septic condition that rapidly leads to death; the difference in the termination probably being due to the ability of the system to resist the poison. When the patient has sufficient vitality to resist the generalization of the poison the destructive process extends to the deeper tissues of the affected limb and the worst appearing sore that can well be imagined will be the result. The vessels, nerves, tendons and ligaments having more power of resistance than the cellular tissue surrounding them, hence the latter is destroyed, leaving the former in position so that they are often plainly visible for several inches, even the bone may become exposed to view. The coats of the veins being the thinnest are usually the first to be destroyed after the cellular tissue and serious if not fatal hemorrhage results.

The prognosis depends very largely on the extent and character of the individual case. It is claimed by some that certain atmospheric conditions favor gangrene, and during such seasons many wounds are troublesome and at such times we would naturally expect gangrenous dermatitis to be more malignant. If the attack be mild and the invasion limited, prognosis is favorable, but if it is extensive and rapidly extending to the deeper structures, it is doubtful, and if ligaments, vessels and tendons are destroyed or generalized septicæmia is established the gravity of the case is greatly increased.

Treatment: As the infection may take place through a very small wound, we will not be likely to succeed by preventive measures. The disease being rapid in its progress, treatment in the advanced stages is doubtful, and if successful the time required to cicatrize the extensive wounds is so long the financial benefits to be derived by the owner from treatment is doubtful. Whatever therapeutic efforts are undertaken should be heroic and applied at the very earliest moment possible after the disease begins. An antiseptic course locally as well as internally

is the one the conditions would most likely prompt us to have recourse to. I have frequently resorted to these without effect. I have gone further with germicides even to a degree of potential cautery and still with doubtful results.

The one agent that has been successful with me in this as well as other forms of gangrene is the actual cautery. I have treated these cases a number of times with the thermo-cautery when it seemed the entire foot was in an advanced stage of moist gangrene, even when sensation was so far destroyed that the animal would allow the hot iron to remain in the tissues for some time without the least resistance and when I thought treatment was entirely useless, and 24 hours later find the disease not only in check but every trace of gangrene gone, leaving only the resulting sores that required nothing more than the usual treatment for simple wounds.

Various kinds of firing irons may be used. The thermo-cautery point that I have used is oval in shape, the largest diameter at the base being about one-half inch, and tapering slightly to a blunt point. I prefer to use it at quite a high temperature, even a white heat, and to puncture into the deeper tissues in various directions, in all the invaded tissues, being careful not to wound the important vessels and joints. Where the skin has sloughed, the cautery point at nearly a white heat is applied to all the denuded surface with deep punctures around the edges. If the disease has originated in the sole from a wound, as may happen, and has extended up to the coronary band and adjacent tissues, I remove all the sole and frog that has been loosened by the disease and if the sensitive sole is much diseased, puncture it even to the solar surface of the os pedis. Twenty-four hours after firing, if it has been sufficient, the previously moist skin will be dry and the underlying tissue that has been soft and pulpy from infiltrated serum will be reduced in size and be firm to the touch with increased heat of the surface and will be soon followed by a healthy discharge and granulation. If at the expiration of 24 hours, some of the parts are still discharging red, turbid serum, are moist, cold and clammy, more firing is indicated.

After the destructive process has been arrested, cleanliness, antiseptics and astringents insure resolution.

If the case be an aggravated one and debility is marked, stimulants are indicated, and the liberal use of hyposulphite of soda will assist in arresting the fermentation of the blood.

DISCUSSION.

Dr. Bennett: About how long was it after firing of these cases till they recovered?

Dr. Moore: That will depend on the amount of sloughing that has taken place, usually twenty-four hours after firing.

Dr. Bennett: Do you think it is due to some specific cause?

Dr. Moore: I believe it is.

Dr. Bennett: You did not notice it in wet weather?

Dr. Moore: Yes.

Dr. Bennett: Was it more prevalent in dry weather?

Dr. Moore: I believe it is more prevalent in some stables than in others.

Dr. Bennett: Do you suppose that this is due to the unhealthy condition of the stable?

Dr. Moore: I do not know; I could not say that. The stables that I found it in were not particularly unhealthy.

Dr. Bennett: What was the condition of these animals you have noticed?

Dr. Moore: Some have been horses in good condition, some were hard worked animals. I have met with those conditions ever since I have been in practice, but never understood them. Moller has given the first light I have been able to obtain on it. I do not believe it is confined entirely to heavy horses, yet I think we find more of it amongst them, probably there is more cause in that class of horses. I think the larger majority of the cases was in Clyde horses or in horses of similar build. Referring to horses that have worked on coal wagons, while I have seen one or two cases of that kind, yet I have seen one case in particular in an animal that had been in town a short time in the spring of the year, and had not been worked more than a day or two. I do not believe that those conditions have very much or anything to do with it; I think it is infectious entirely.

(To be continued.)

CHICAGO VETERINARY SOCIETY.

The regular monthly meeting was convened on Thursday evening, April 13th. President Robertson presided and the following members were present: Drs. Frank Allen, A. H. Baker, L. Campbell, A. M. Casper, Jos. B. Clancy, C. F. Griener, W. E. Howe, Jos. Hughes, C. G. Nelson, H. D. Paxson, and Jas. Robertson.

Dr. Jos. Hughes, Chairman of the Legislative Committee, reported the result of the committee's inquiry into the sentiments and attitude of the recent candidates for the mayoralty, and found that it is perfectly and absolutely useless to make any further effort to persuade the present mayor to do anything favorable in our behalf.

The applications of Drs. H. Busman and A. J. Pistor for membership were favorably reported on by the Board of Censors and they were duly elected.

TEMPERATURE AND ITS RELATION TO SOUNDNESS.

Dr. A. M. Casper presented the subject of "Temperature and Its Relation to Soundness," which was discussed at length and proved very interesting to all present.

Dr. Casper: I would like to ask the members of this society what in their opinion the temperature of a horse has to be in order to pronounce same unsound. Should an animal with a temperature of 103, that is green and is for sale at the yards, be rejected? That is, if there are no other symptoms of disease present. Although this high temperature is a deviation from a normal point, I do not think that such an animal should be rejected. If you would ask me if that animal is absolutely sound I would say "no," but ordinarily I would pass an animal like that, advising the owner to watch him for a day or two. I would like to hear the opinions of the members on this subject.

Dr. Campbell: I do not think that I would pass a horse that has a temperature above normal.

Dr. Grüner: I bought two horses a few weeks ago and just for curiosity took their temperatures. They had an elevation of two degrees above normal. I do not think it amounts to much. These horses are all right now, and as most of the green horses have a rise in temperature we ought to be very lenient. After they got accustomed to the barn they were all right. There was a slight loss of appetite for the first day or so.

Dr. Baker: Mr. Chairman and gentlemen, this idea of taking the temperature of horses without any symptoms that may cause suspicion that something is wrong is a new idea to me. I never think of doing such a thing unless there is something to arouse my suspicion that there is something wrong. If there is no cold nor loss of appetite present I think it is superfluous. I never had the curiosity to take the temperature anyway, so that I am unable to add anything to the history of such cases, but if it is a fact that these green horses all have an elevation of temperature

without any other symptoms of disease I think it would be impolitic to reject them on account of that. Horses brought from the country into the city are always somewhat excited and this excitement is aggravated by the pushing, hauling, whipping, etc., that they get in the yards, which is sufficient to produce an elevation in temperature. It is known as ephemeral fever. The change of feed and the different surroundings are sufficient to produce some elevation of temperature, but without any other symptoms, I think it would be an injustice to reject such horses.

Dr. Howe : I have often found that the slightest little change caused some rise in temperature.

Dr. Paxson : I think that the thermometer is very important and should be used to a greater extent. In cases of influenza, for instance, the thermometer points to the affection before any other symptoms are apparent. So that you can check the disease before it develops. Many times horses are found apparently well that have high temperatures, and the next day they are found to be very sick. I think that from a scientific standpoint we should not accept a horse with abnormal symptoms.

Dr. Baker : Dr. Paxson's and my ideas are not apparently on the same point. In influenza the temperature rises suddenly, sometimes in six hours. A case of temperature at 102 with no other symptoms, but possibly a little stocking of the legs, and a temperature of 106 are two different things. I think in a case where the temperature is above 102 or 102 $\frac{1}{2}$ it would be fair to put the animal under treatment for 24 hours. If it is influenza it will develop by that time, if not it will be normal.

Dr. Campbell : Suppose you know that a horse with a temperature of 102 has been in the stall and had no excitement, would you accept that horse?

Dr. Baker : I would draw the line as to the condition of the horse. Fever and influenza develop very rapidly; you see the temperature go up then within an hour to 106. I would not reject a horse that does not show any other suspicious symptoms but rise in temperature to 102.

Dr. Hughes : It would be well for us to arrive at some definite temperature. A horse with a temperature of 102 $\frac{1}{2}$ is suspicious, but 102 is not. In a green horse there is a certain amount of indigestion present and excitement follows. This accounts also for the swollen legs we find. A horse with 103 should be rejected. I never take a horse's temperature any

more than I analyze his urine, and do not think that a horse with a temperature of $102\frac{1}{2}$ should be rejected. I would like to know whether 102 is a very abnormal temperature in the sale ring, at the Union Stock Yards—that is, take it in the morning and night. I know that the majority of these horses whose temperature I took varied between 101–102 every day.

Dr. Campbell: Did you find an animal in normal health 100 or below?

Dr. Hughes: I did.

Dr. Campbell: I find as a rule that my thermometer registers between 99 and 100, and I consider the horse then all right. Above that I do not, and by giving him drugs his temperature always goes down to 100. Has the size of the horse anything to do with it?

Dr. Hughes: I do not think it would in particular.

Dr. Baker: I have taken the temperature of a great many horses, and I have come to the conclusion that the normal temperature of the horse is about 100. Some German authority tested as many as 600 at a time and found the average 99.9 F.

Dr. Day: I remember in Wichita, Kan., I had a horse to treat that was then racing. This horse was suffering from throat trouble, and I was asked to examine him. I found his temperature to be 101. I told the owner that I did not think the horse suitable to race, but that he could try it. It would not hurt the horse. After the race, I saw the horse and found his temperature to be 105 3-5, and I made up my mind that he did something very harmful, but to my surprise next morning I found that the horse's temperature was but little above 100. I found all horses that I examined that had a temperature of a little above 100 or 101, especially race horses, after the exertion had a temperature as high as 104-5, but were all right again after a little rest. If we would reject horses that had no other trouble present but high temperature we would have to reject all these horses.

Dr. Robertson: I have had considerable experience with shippers that go into the yards to buy and sell horses. I have had them take horses out of my hands that had a temperature of 105 and coughed. They took them into the yards and sold them as sound. If the party that purchased such a horse would have taken his temperature after going out of the ring he would have necessarily detected that there was something wrong, and I have no doubt that passing so many horses through the ring without taking their temperatures has to a certain extent caused

a prejudice against such horses, as they often get sick very shortly after they are bought and taken to the barns. I knew of a hundred that passed through the ring that way. On the other hand, I have taken the temperature of horses after a trip of four to five miles and found them to be from 104-5. I recommend all such horses to stay in the barn till the next morning, and as a rule find their temperatures then to be normal. The excitement of the trip raised the temperature. If the temperature did not go down next morning I rejected the horse. Last week I bought a horse in the yards with a temperature of 102. I led him down behind a buggy, put him into the barn, took his temperature and found it to be 104. I left him in the barn till next morning, took his temperature then, and found it to be 101. In heavy horses, as a rule, I find that their normal temperature is between 101-102. My experience with heavy horses is, that if they quit eating they are very seriously sick. If this is the case, even if their temperature is but 102, we ought to commence treating them at once, as we can thus prevent serious illness. Some barns make it a rule to give all new horses that just come into the barn a little fever medicine. I think it is a good idea to take the temperature of all such horses that come from the yards.

Dr. Paxson : I would like the society to come to a conclusion as to what would be the highest temperature with which we could allow a horse to pass.

Dr. Robertson : I think 102 $\frac{1}{2}$.

Dr. Hughes : What is the normal temperature of the horse? I think 101.

Dr. Robertson : My experience is largely with these heavy draft horses. There were some whose temperature I took every morning, and found that it was very close to 102. I presume it was because, as a rule, they were in close confinement and had but little exercise. I always supposed that the normal temperature was 100. If anyone would ask me what the normal temperature of horses is, I would say in heavy horses from 101-102, in light horses about 100. I never bother my head if the temperature of a heavy horse is 102, and I pronounce him sound. In light horses I have not had so much experience, as I have not taken their temperatures so frequently. 100 I should judge would be considered the normal temperature of such horses.

Dr. Hughes : What is the normal pulse of a horse?

Dr. Pister : I find that heavy Percheron and Normandy

horses in this section of the country have a pulse of about 30-32 degrees. That is in heavy stallions. The pulse of all these horses varies very much. It varies from three to five beats. It makes a difference between country and city horses. The former are not apt to get so excited, hence their pulse is much lower.

Dr. Baker: I find as an average the horse's pulse is about 35-36. I have found many cases as low as 25-28 in draught horses.

Dr. Casper: Among thirty horses in the yards, I took the pulse of five and found it to average between 42-49.

Dr. Pister: I found in heavy draft horses in New York that the pulse varies between 36-45. I should suppose that anything between 36-45, where there are no symptoms of any other trouble present, should be considered normal. It is a hard thing, however, to set down any rule that would be actually a normal pulse.

Dr. Hughes: I think that the normal pulse is between 40-42.

Dr. Griener related his experience before the examining board of the City Civil Service Commission. A few of the questions asked are subjoined:

- (1) How would you construct a patrol wagon?
- (2) How would you construct a patrol box?

The Doctor became exasperated and refused to answer such questions, yet he received a mark of 76 per cent., and a former patrolman received about 99 per cent., and was appointed City Veterinarian. Meeting adjourned. JOS. B. CLANCY, *Secretary*.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The annual meeting of this society will be held in New York City, on the 8th and 9th of next month, immediately following the convention of the American Veterinary Medical Association, giving its members an opportunity to attend the dual event and to participate in the very elaborate programme prepared for that convention, including an educational feast the most sumptuous ever prepared for it, embracing the discussion upon the sanitary subjects presented at the Omaha meeting, about thirty original papers on very diversified topics, from the most practical theme to the highest points in State medicine, besides a pathological display of large proportions, and surgical clinics every morning. Aside from this, the members of the State Society are cordially invited to join their brethren

of the National Association in the various entertainments arranged by the local committee, and every inducement is put forth to secure a large attendance of members from every county in the State, as well as other veterinarians who are not and would like to connect themselves with the State Society. There can be no doubt but that of all times no practitioner in the Empire State can afford to absent himself from Gotham during the second week in September.

The place of meeting will be the assembly rooms in the Academy of Medicine occupied by the County Society, and it will be found both centrally located and well adapted for the purposes of the association.

The literary programme so far as completed is as follows:

Dr. W. L. Williams, Ithaca, N. Y., "Iodine in the Treatment of Poll-Evil and Fistulous Withers."

Dr. Veranus A. Moore, Ithaca, N. Y., "The Streptococcus and its Rôle in Comparative Pathology."

Dr. George H. Berns, Brooklyn, N. Y., "Quittor."

Dr. Roscoe R. Bell, Brooklyn, N. Y., "Shoulder Lameness in the Horse."

Drs. James Law and Veranus A. Moore, Ithaca, N. Y., "An Infectious Mycosis of the Lungs and Air Passages in Solipeds."

Dr. H. D. Gill, New York City, subject not announced.

Dr. Simon H. Gage, Ithaca, N. Y., subject not announced.

ASSOCIATION OF FACULTIES AND EXAMINING BOARDS.

Secretary Merillat reports the following interesting programme for the meeting of the Association of Veterinary Faculties and Examining Boards of North America, to be held in connection with the New York meeting of the American Veterinary Medical Association:

A. W. Clement, "State Examinations."

W. L. Williams, "The Teaching of Practical Surgery."

C. Barnwell Robinson, "Aims and Objects of an Association of Faculties."

S. J. J. Harger, subject to be announced at the meeting.

M. J. Reynolds, subject to be announced at the meeting.

Others to be announced later.

The doors will be open to all members and visitors of the American Veterinary Medical Association, instead of behind closed doors as in former years.

NEWS AND ITEMS.

DR. H. D. GILL, New York, is campaigning his fast pacer, "Beverley."

DR. THOS. CASTOR, of Buffalo, N. Y., is taking a short leave of absence to visit Philadelphia friends.

"IT IS A COMFORT TO RECEIVE THE REVIEW EACH MONTH."
—L. D. LeGear, V. S., Austin, Tex.

DR. JOHN P. O'LEARY, Inspector for B. A. I., at Boston, Mass., was united in marriage June 21 to Miss Lillian Wilson at Buffalo, N. Y.

DR. GEO. W. BUTLER, of Circleville, Ohio, has accepted the position of Assistant Inspector to the B. A. I., and assigned for duty at Milwaukee, Wis.

JOHN M. PARKER, D. V. S., of Haverhill, Mass., Secretary of the Massachusetts Live Stock Commission, is on a visit to Scotland, his native land.

E. H. BROWN, V. S. (McKillip, '97), is veterinarian to the port of Manila, Philippine Islands, under the U. S. Army. He reports rinderpest and foot-and-mouth disease prevalent in the islands.

MR. HARRY H. HULBIRT, of the B. A. I., stationed at Buffalo, N. Y., has resigned his position with that branch of the government to accept one in Uncle Sam's treasury at Washington, D. C.

E. B. ACKERMAN, D. V. S., Brooklyn, N. Y., is spending a month in the higher altitude of the Adirondacks in the hope of eliminating a laryngitis that has been troubling him during the late spring and summer.

THE KANSAS CITY VETERINARY COLLEGE has sent forth its very well arranged catalogue for the session of 1899-1900 and we are glad to hear through Dean Stewart that there is every prospect of an increased attendance.

WE acknowledge the receipt of an invitation to attend the tenth semi-annual meeting of the Illinois Veterinary Medical and Surgical Association at the office of S. H. Swain, Decatur, Illinois, Thursday and Friday, August 3d and 4th, 1899.

W. B. E. MILLER, D. V. S., of the Bureau of Animal Industry, at Garfield, N. J., has been suffering from septic poisoning due to the sting of an insect, and between that and the twinges of rheumatism he has had an interesting time throughout the month of June.

THE VETERINARY SERVICE ASSOCIATION sent letters to

almost every veterinarian in Greater New York, asking them to call at its offices to sign a contract to become its slaves, in each of which it says: "We have several applications in your location." We do not believe a single man of standing in the community will respond. For particulars, see editorial in this issue.

AGRICULTURAL COLLEGE AND EXPERIMENTAL FARM FOR NOVA SCOTIA.—An act passed at the last session of the Provincial Legislature authorizes the purchase of land for an agricultural college and experimental farm and the erection of suitable buildings, appropriating \$20,000 for the purpose. The college will take the place of the provincial agricultural school at Truro and the horticultural school at Wolfville.

DR. L. D. LEGEAR, of Austin, Texas, read a paper last month before the Texas State Farmer's Congress upon the subject of "Preventive Inoculation against Texas Fever." He has had extensive experience along this line during the past year, using the defibrinated blood from native stock. His experience has taught him that "when properly administered, and proper care taken of the animals, it is almost a sure preventive."

NEW YORK TUBERCULOSIS COMMITTEE.—*Albany, June 21.*—The special Assembly committee appointed by Speaker Nixon to investigate the spread of tuberculosis among cattle in this State, with a view of suggesting remedies to stem the disease, held its first meeting here to-day. The members of the committee are Assemblymen Witter of Tioga, Fancher of Cattaraugus, and Henry of New York. E. A. Callahan of this city, was elected Secretary of the committee. The committee will give public hearings here on Aug. 1 and 2, and at Syracuse on Aug. 3 and 4. The committee has \$2500 with which to prosecute its investigations.

SPRATTS PATENT EXTENDING HIS BUSINESS.—The business so well and favorably known to the veterinary public as Spratts Patent, manufacturing foods for dogs, cats and poultry, as well as other specialties, have found their premises, 245 E. 56th Street, New York, too limited for their increasing business, so they have purchased property near the Pennsylvania and Central Railroad depots in Newark, N. J., where they will have more room and larger accommodations for the storage of materials. They also intend to increase their ovens to double, and expect to be in full operation in their new factory before the end of the year.

DOES HEATING MILK DESTROY GERMS?—Sidney D. Myers, V. S., writes as follows to the *Breeder's Gazette*: "After reading your recent article, 'Cream on Pasteurized Milk,' the following question came into my mind: Does heating milk to 140 deg. Fahr., or even to 155 deg. Fahr., destroy all germs? I read in Friedberger & Fröhner's Pathology that the bacilli of tuberculosis are destroyed by a temperature of 85 deg. Cent., which, if I figure rightly, would be 185 deg. Fahr. I recently witnessed the slaughter of four hogs at the Ohio Agricultural Experiment Station that had been fed on milk from tuberculous cows. Two of them had been fed on the milk untreated, while the other two were fed on Pasteurized milk, but all of the hogs were found to be tuberculous."

RABIES IN WILD ANIMALS.—In answer to inquiries made as to whether wild animals were attacked with rabies, Dr. W. O. Dawson reports the following: "A jackal was kept for seventeen days in a large kennel, built for that purpose, well fed and looked after. On being let out in front of a pack of hounds, the animal was killed after a run of about thirty-five minutes. The leading hound, who brought him down at least 75 yards in front of the rest of the pack, was rather badly bitten, and six days after showed marked symptoms of rabies, and died on the third day after being attacked. This pack being always strictly kept away from other dogs, this being the only case of rabies, also the fact that the jackal had been to all appearances perfectly healthy, and kept in isolation for seventeen days, make the case rather peculiar."—*Veterinary Review*.

CATTLE FOR CUBA.—In accordance with terms of the recent order for the free admission of 50,000 head of graded cattle into Cuba within the next year, the Secretary of Agriculture has issued regulations covering their admission. To secure the advantages of the order cattle must be shipped either from Savannah, Mobile, New Orleans or Galveston, and satisfactory evidence must be supplied that they are not from the fever district as outlined by the department. The animals will be inspected by an inspector of the Agricultural Department at the port of shipment, "and if they are found to be graded cows and bulls, suitable for breeding purposes, free from disease, and immune from the fever tick, the inspector will issue a certificate embodying these facts, which certificate should accompany the cattle and be presented to the customs officer at the port of landing."

A VETERINARY MUNCHEAUSEN.—Dr. J. R. Mitchell, of

Evansville, Ind., sends the REVIEW the following clipping from a woolly Western newspaper: "A recent report says a Kentucky horse was afflicted with a strange ailment, seeming to be almost wild with pain, and, being a family pet, every effort was made to relieve him. At last there appeared a young veterinary surgeon, just graduated, and he, after a lengthy examination, announced that the horse was afflicted with a peculiar disease of the teeth, that could be cured only by extracting them and grafting in new ones. It seemed cruel to take a horse in perfect health and pull out his teeth for such a purpose, but it happened the very next day a horse near by broke its leg and had to be shot. The young surgeon was on hand; he drew out the teeth of the dead horse, hurried back to the live horse, had it strapped up, and after an hour's hard work drew out the diseased teeth and inserted the new set. The operation was a complete success, and the horse is now careering around, no longer in pain, and possessed of a new and excellent set of teeth."

"THEORY AND PRACTICE."—Mr. A. C. Bostwick, who owns the fastest electric carriage in New York, and who was among the first to get one, said in the *Rider and Driver* office on Wednesday: "My motor carriage is broke down. Not a week passes but what something gets out of order with it. I'm sick of it, and wouldn't bother with another one if the makers should send it to me as a gift." That Mr. Bostwick knows the difference between horses and motor carriages will be readily granted. He has a stable full of horses and carriages of every description, and, with his celebrated four-in-hand, purchased from C. F. Bates, last year won the park team prize at Madison Square Garden Horse Show. It has been said of horses that they are dirty and perishable; in answer to the first accusation we should like to know what is dirtier than machinery when not kept properly cleaned. On the score of perishability, let us say that we know of no machine that would last one-tenth as long as the life of a horse if it were not being constantly renewed in parts.—*Rider and Driver*.

THE SURE CURE FOR SPAVIN.—"An illiterate 'hoss doctor' has of late sent me at frequent intervals murderous attacks upon good English which vaunted the miraculous powers of a spavin cure. The doctor seems to be a graduate and may have some knowledge of his profession, although the almost instantaneous cures claimed for his spavin annihilator are not in accord with the more gradual processes of nature as observed and noted by the teachers of veterinary science in the reputable schools. A

Preston horseman telling me of a trainer whom he had recently visited said: 'I found him putting on some of ——— spavin cure.' Then it occurred to me to write for the result, and I am just in receipt of the reply, which is as follows: "Yes, I have used ——— spavin cure. I call it a genuine humbug. It will scar—kill hide and hair—and will produce a heavy growth on any flesh it may be used upon. It did cure lameness, but the cure is worse than the disease." This would indicate that there is to be no revolution in the treatment of spavin. The wisdom of the ages is not to be overturned by awkward English and the destruction of tissue."—(*M. T. G. in Breeder's Gazette.*)

ADVERTISING WITH A VENGEANCE.—The following advertisement, clipped from an Illinois newspaper, was forwarded to us by a western correspondent, and occupied a double-column space, with large display letters for the principal lines: "Dr. E. H. Herring, Perry, Illinois, Veterinary Surgeon and Dentist. Graduate Chicago Veterinary College. Two Years Course. The branches taught are theory and practice of Veterinary Medicine, anatomy, cattle pathology, physics and chemistry, physiology, materia medica, helminthology, veterinary surgery and obstetrics, microscopy, histology, morbid anatomy, veterinary dentistry, gross pathology and bacteriology. Diseases and their treatment of all the domesticated animals. Remember I am no Quack Horse Doctor. I have no near relative who was a veterinary surgeon die and 'will' his veterinary knowledge to me. I do not ask the people of Perry to educate me; I paid my good hard money and took a two years' course in one of the best Veterinary Colleges in America. I practiced my profession at Mt. Sterling, Ill., for 6 years; so I have had the practical experience as well as the theory. Many bad cases will get well if given 'colored water,' and this is where the quack horse doctors make their 'mark.' A qualified veterinarian can save many valuable animals by his knowledge of medicine that the so-called veterinary surgeon (quack) would not even know what was the matter, but would give a few doses of medicine and look wise, but in spite of his wonderful medical skill the poor animal dies, perhaps hurried into eternity by a wrong dose of medicine. I say boldly that one cannot be a veterinary surgeon without a knowledge of the anatomy of the horse; (I have made two complete dissections of the horse) neither can one prescribe medicine successfully without a good knowledge of chemistry, physiology and medicine, and its physiological classification. If one doesn't know anything about medicine and the diseases of our domesti-

cated animals it is easy to fool one. In this way the quack horse doctor tells you a smooth story and at the same time looks wise and you take it for granted that he knows 'all about it.' Many people make a mistake by letting a sick animal go until it is too late before calling on a qualified Dr. and in this way lose valuable animals that could be saved if properly treated and taken in time. I have a full set of dental instruments for extracting, filing off sharp corners and cutting off long teeth. I will treat all cases and do dental work brought to me for half price for cash, and up to the first day of November and will make calls to the country in the same proportion. All I ask of you is to give me a chance to do your work. While I may not please all I am confident I can demonstrate to the public in a short time the superiority of my college education as a Veterinary Surgeon over that of any quack horse doctor who has 'picked it up.' When you or some member of your family gets sick you do not call in your neighbors or some quack doctor to treat the case, but you get a qualified M. D. Just so with your sick animal, you should get a qualified veterinarian to treat the case. It will be dollars and cents in your pocket in the long run. Yours for business, "Dr. E. H. Herring. Office, W. L. Sharper's Drug Store. Residence: Ed. Wade's property, 1 block east of the School Building. All calls promptly answered, day or night."

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